

# Clinical Medicine

## A Monthly Postgraduate Course

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### Dr. Theobald Smith

ON July 31, 1859, a son was born to Philip and Theresa (Kexel) Smith, at Albany, New York, and they named him Theobald, a name of Teutonic origin meaning, "bold for the people."

Young Smith was educated at Cornell, being graduated with the degree of Ph.B. in 1881. He then entered Albany Medical College, from which he emerged as a Doctor of Medicine in 1883.

Dr. Smith was one of those who elected to devote his life to scientific investigation for the benefit of the whole profession and the world, rather than to the practice of the healing art upon the sick and suffering, and in accordance with this decision he obtained the appointment, in 1884, as director of the pathological laboratory of the Bureau of Animal Industry, in Washington, where for eleven years he investigated infectious diseases of animals and at the same time held the chair of bacteriology at Columbian (now known as George Washington) University.

His studies of the diseases of animals enabled him to make exceedingly important contributions to our knowledge of the relations between human and bovine tuberculosis, which were the result of his researches made during the years, beginning in 1915, when he was director of the department of animal pathology at the Rockefeller Insti-

tute for Medical Research, in New York. He has been a member of the board of directors of this institution since 1901.

In 1888 he married Lilian H. Egleston, of Washington, D. C.

In 1895 he was called to be the director of the pathological laboratory of the Massachusetts State Board of Health, which position he held for twenty years. From 1896 he was also professor of comparative pathology at Harvard.

In 1908 he took a prominent and active part in the Sixth International Congress on Tuberculosis, which was held in Washington, being its first meeting in this country.

Dr. Smith's large contributions to medical science have been recognized by the conferring upon him of the honorary degrees of A.M. (by Harvard, in 1901); LL.D. (by the University of Chicago, in 1907); Sc.D. (by Harvard, in 1910, and by Yale and Princeton, in 1917); and the honorary degree of M.D., by the University of Breslau, in 1911. He is a member of the National and the American Academies of Arts and Sciences, the Association of American Physicians, the Society of Experimental Biology and Medicine and a number of other learned organizations, as well as being an honorary member of a long list of foreign scientific and technical societies.

That Dr. Smith, now 67 years old, is still

very active in his chosen line of work is evidenced by the fact that he has recently been elected president of the National Tuberculosis Association.

A nation is like the individual, subject to the same laws and offered by his Creator the same inducements for sobriety and industry.—Dawes.

### ADVERTISING

The ancient code of medical ethics has forbidden the physician to advertise his skill in the public prints, and those who have transgressed against this law, no matter in how sincere or inoffensive a manner, are looked down upon by their more ethical confreres. Perhaps this is wise and best.

But in other lines of human endeavor the information disseminated by means of paid advertising, by those who had some material thing or some service to sell, has added no mean quota to the sumtotal of human knowledge and efficiency.

There are few institutions of pure learning which are sufficiently endowed to permit the intensive and practically unlimited investigations which are carried on and financed by certain great commercial institutions, as a matter of business expediency. The academic researchers in our colleges have given us much information regarding new chemicals and medicinal substances; but those who are studying in the laboratories of our great chemical and pharmaceutical manufacturing concerns are giving us as much or more.

When a man or a company has developed a new chemical, a new apparatus, a new procedure or a new type of service, a trained man is employed to describe the new product in the simplest, most straightforward and most attractive manner possible and then many dollars are spent in broadcasting this valuable information to the class of people who will be most deeply interested in it. The purpose may be selfish on the part of the advertiser, but the result, upon the reader of advertisements found in reputable and reliable magazines, is not only a very probable improvement in his economic status, but a considerable increase in his special knowledge.

The man who, today, does not read the advertisements in any magazine he buys is cheating himself out of a considerable part of the dividends upon the investment he has made in buying the periodical. It is almost certain that he will find matter of great interest in the advertising pages, and

quite possibly their perusal may result to his financial advantage.

All good magazines now scrutinize their advertising copy carefully so that their readers may not be cheated nor misled. Most advertisements are written, by experts, so as to convey truth in an entertaining manner. They are intrinsically worth reading.

Both advertisers and publishers are eager to have all readers take advantage of any offers which may be made in the advertising pages, so do not hesitate to ask for any of the offerings which you may need or want. Everybody concerned likes to have you state, in writing to advertisers, where it was that you saw their announcement. It takes but a few seconds to give this information and the seemingly small courtesy is highly appreciated.

For your own sake, then, primarily, as well as for the benefit of advertisers, publishers and the world of business in general, read the advertisements in every magazine that comes into your hands (especially those dealing with your profession); write freely to any who offer you advice, service or merchandise, and when you write be sure, for everybody's happiness and success, to tell them when and where you "seen their ad in the paper."

All works of quality must bear a price in proportion to the skill, time and risk attending their invention and manufacture. Those things called dear are, when justly estimated, the cheapest.—John Ruskin.

### CALCIUM AND POTASSIUM CHLORIDES IN HYPERTENSION

High blood pressure is becoming such a common symptom that much investigation as to its etiology and treatment is going on all over the world. The mechanism of those cases where the hypertension results from arteriosclerosis or from cardiac or renal impairment is fairly well understood. It is the cases of "essential" hypertension that are being especially studied, and the work of Dr. Ralph H. Major, of Kansas City, indicates that the guanidine bases are at least among the factors producing this condition.

To most physicians the establishment of the cause of any disease is of less practical moment than the discovery of some adequate treatment, though, of course, the finding of the cause usually precedes the working out of a reliable method of treatment. It is of interest to note that some of the researches into the cause of hypertension have

included observations pointing toward therapeutic possibilities.

While experimenting with the guanidine bases, Major and Stephenson found (*Johns Hopkins Bulletin* for June, 1924) that, after the blood pressure of dogs had been raised by the injection of these substances, it could be promptly and permanently reduced to normal by the intravenous administration of calcium chloride, alone or combined with potassium chloride. They considered the combination more satisfactory, as it produced less irregularity of the heart's action than did the calcium chloride alone.

Clinical work upon human beings has been reported by Addison and Clark, in the *Canadian Medical Association Journal* for September, 1925. These men studied 45 consecutive cases of hypertension of all varieties—cardiac, renal, arterial, etc.—all of which had a systolic pressure of from 170 to 262 mm. of mercury and a diastolic of 84 to 152 mm. when the treatment was begun. The ages of the patients were from 28 to 91 years. No result was considered satisfactory unless the systolic pressure was reduced 30 or more and the diastolic 12 or more millimeters, and maintained at that point.

The dose of calcium chloride was 90 to 180 grains a day, depending upon the patient's weight, given in a mixture with compound tincture of cardamom and simple syrup, in three doses, one after each meal.

If at the end of a month no satisfactory fall of pressure had occurred, potassium chloride, in the same dosage, was substituted for the calcium salt. Results were checked clinically by discontinuing the drug for a week or two, watching the blood pressure, and resuming treatment again if a rise occurred.

Of the 45 cases treated, 57.7 percent reacted with the calcium chloride and 13 percent with the potassium, making a total of 32 patients (70 percent) who were benefited by the treatment.

Cardiac and renal cases, suffering from edema, showed a prompt reduction or disappearance of this symptom and all felt much better, subjectively.

The main difficulty in using such large doses of calcium salts is that they are likely to upset the digestion. This may be minimized by giving the doses after meals, diluted with plenty of water, and followed by a glass of milk or buttermilk. The possibility of producing an inorganic acidosis should not be overlooked. Neither of these

conditions results from the use of potassium chloride.

While the doses recommended may seem large to some, we feel sure that, if proper precautions, as suggested, are taken, they can be administered with perfect safety and with little or no serious discomfort, even over the long periods which they must be used to obtain satisfactory results.

This treatment now seems to be founded upon a sound experimental and clinical basis, and it is to be hoped that a large number of physicians will make use of it, checking their results by frequent, careful estimations of the blood pressure, and report their experiences fully and accurately for the benefit of the profession in general.

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Popular opinion is thick with fossilized misconception, held in suspension by stultifying tradition.  
—Dr. O. Victor Limerick.

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#### PLOW HORSES AND BUTTERFLIES

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The massive, powerful and stolid percheron does a very large part of the world's heavy hauling—but he doesn't win any derbies. Maybe the derby-winners aren't of much practical use in the world, but they contribute largely to the spice and excitement of life and prove good investment for their owners.

Some people are the world's plow horses (more power and glory to them!) and some are race horses and some are just butterflies, flitting from flower to flower and adding color and liveliness and joy to the days of the toilers. Who are we that we should judge which are most important? Truly, all are God's children!

The practical point to this outburst is that people of all these kinds come into our consulting rooms and we visit them in their homes. Have we developed a special technic for dealing with each different kind? If not, we have a heap to learn about the art of medicine. You can larrup a plow horse with the loose end of a tug strap and he will think you are tickling him; but don't try that kind of treatment on a butterfly!

Maybe the butterfly would dearly love to make butter if she only knew how. Maybe you can teach her. Perchance the race horse is longing to pull a plow through the rich and fragrant fields of spring; or the plow horse is pining to see his picture in the papers, his neck encircled by a huge horseshoe of flowers. If you can tactfully convince each that his own job is the finest in the world (it really is, you know!) it may

well happen that you will have done more to restore his health than could have been accomplished with four gallons of pokeweed juice or seven hundred dollars' worth of diathermy.

Keep an eye out for the plow horses and the butterflies; value them equally and treat each according to his nature. So shall you bring joy to your friends, health and peace to your patients, and success, in every possible sense, to yourself.

To the patient there are no "little things."—Von Leyden.

#### HYOSCINE AND HYOSCYAMINE

*Hyoscyamus*, or henbane, is the dried leaves and flowers of *Hyoscyamus niger*, a plant which is native to Asia and Europe and has been naturalized in the United States. It belongs to the *Solanaceæ*.

*Hyoscyamine*, the milder of these two alkaloids, produces physiologic effects so similar, in general, to those of atropine that the article on Belladonna in CLINICAL MEDICINE for September, 1925 (p. 589), may well be studied again in this connection.

There are, however, several distinct differences between hyoscyamine and atropine. The former drug contains enough hyoscine to render it decidedly more quieting and depressing to the nervous system than is the latter, which makes it even more efficacious in conditions, where local spasm or arterial relaxation exist, where pain is due to spasm or where mild nervous sedation is required. Its use has been widely recommended in nervous coughs (including whooping cough); in colics of all sorts—intestinal, renal, uterine, etc.; in urinary incontinence due to irritable bladder and in all the various conditions for which atropine is useful, with the addition of those which may be benefited by the decided nerve sedative action produced by its content of hyoscine.

There are those of wide experience who feel that hyoscyamine is the most efficient general analgesic we possess (see, for instance, CLIN. MED. for November, 1925, p. 765), especially when it is combined, in suitable cases, with aconitine.

The dose of hyoscyamine is from 1/250 to 1/50 grain, by mouth or hypodermically. Its prompt absorption, especially by the buccal mucous membrane, renders its subcutaneous administration unnecessary, in most cases. An appropriate dose, placed under the tongue, will usually produce re-

sults in a very few minutes. The dose may be repeated at intervals of an hour or two until therapeutic or physiologic effects—dryness of the throat, flushing of the face, etc.—are produced. Some prefer to give very small doses (1/1000 grain) every few minutes, to effect.

As with atropine, poisoning with hyoscyamine is rare, due to its prompt elimination. When it occurs the physiologic antidotes are pilocarpine, morphine or aconitine. The two former remedies should be given hypodermically.

*Hyoscine*, which is said by some observers to be identical with scopolamine (from the dried rhizome of *Scopola Carniolica*)—so much so that the two names are used interchangeably—is a thick, syrupy liquid. It is much the most powerful cerebral depressant of all the members of the nightshade family, producing sleep, in most cases; but like atropine, it may, in rare instances, give rise to delirium or even maniacal symptoms. Overdoses produce loss of reflex action. There is little effect upon the circulation. The antidote is pilocarpine, hypodermically.

*Physiologic Action.* A hypodermic injection of 1/100 grain of hyoscine hydrobromide, given to a normal person, is followed in from 10 to 15 minutes by dryness of the mouth and throat; dizziness and slight mental confusion; moderate muscular incoordination and partial loss of accommodation. Next comes a feeling of profound drowsiness and fatigue and if left to himself the patient will settle down in the nearest chair and sleep soundly for from three to six hours.

*Therapeutic Uses.* Hyoscine is our most reliable hypnotic in cases of mania and hysteria where the patient does not sleep, is violent and refuses to swallow or retain food. The dose, in these cases, is 1/100 to 1/90 grain, hypodermically or by mouth. If the desired effect is not produced the drug may be combined with 1/30 grain of apomorphine or 1/4 grain of morphine.

In the treatment of alcohol and drug addictions hyoscine is very useful. The patient must be under complete control and must be kept thoroughly under the influence of the hyoscine for some days. Doses of 1/100 grain may be given, hypodermically, every two hours, or as often as necessary to keep him quiet.

*Spermatorrhea* and nocturnal emissions are generally controlled by doses of 1/100 grain of hyoscine, given at bedtime.

In the eye, hyoscine is far less irritating than atropine and its effects are very prompt but not so lasting as those of the latter drug. In *plastic iritis*, especially in the early stages, a solution of 0.2 percent (1:500) in water is dropped into the eye every 20 minutes for one hour; after that, as needed to maintain mydriasis. If it proves painful, a drop of cocaine or butyn solution may be used before each instillation of hyoscine.

Hyoscine, combined with morphine, has been used for producing *general anesthesia*, but it is less reliable, safe and satisfactory than the volatile anesthetics. When, however, especially in emergency surgery, no anesthetist is available, these drugs may give good service. Two doses of 1/100 grain of hyoscine, with 1/4 grain of morphine, are given an hour apart. Half an hour after the last dose fractures may be reduced or similar procedures carried out with little pain to the patient. One dose is frequently given an hour before starting inhalation anesthesia. It allays fear, lessens the amount of anesthetic needed, reduces postanesthetic vomiting and causes the patient to sleep for several hours after the operation.

The socalled "twilight sleep" in *obstetrics* depends upon the judicious use of hyoscine and morphine and has given good results in the hands of many careful physicians who had time to stay with the patient and watch her. A method of using these drugs is outlined on page 517 of the July, 1926, number of CLINICAL MEDICINE.

In hospital practice, where nitrous oxide is available, this combination is now rarely used, but in rural practice it still brings great relief to parturient women and, if used with judgment, is only slightly dangerous. It is especially useful in primiparae, whose first stage is long and trying. It is *contraindicated* in *eclampsia*, *placenta previa* and *decompensated cardiopathies*.

In general, hyoscine is *contraindicated* in cases of *kidney disease*, in the sore throat of *scarlet fever* and in *insomnia*, the result of *heart disease*.

Here we have two very potent drugs, capable of rendering great service in a considerable variety of cases, and the physician who aspires to do everything possible for his patients, under all circumstances, can add greatly to his professional ability and prestige by studying them carefully and using them with boldness, controlled by knowledge and judgment.

The only night air that is injurious is last night's. Open the window and let it out.

## TEACHING PEOPLE HOW TO LIVE

Our grandfathers—yes, even our fathers—may have felt, with a perfectly clear conscience, that they had discharged their whole duty to the community when they had done their best to ameliorate the condition of such patients as applied to them for professional advice or assistance. In the first place, nobody, not even the doctors, knew much about the prevention of disease nor the laws of health. Sickness was a dispensation of Divine Providence, and health a matter of good luck.

But we have lived through that particular phase of our progress toward civilization—of course, we are not yet civilized, but merely on the way—and the modern physician whose sole activities consist in caring for the immediate pathological conditions present in those who consult him will soon be (even if he is not so already) looked upon with suspicion by his confreres and by the public.

Today the forward-looking physician is devoting a very considerable proportion of his time and energy to teaching people how to dispense with his services as a *healer*; but if he is a wise and thoughtful man he is, at the same time, teaching them to appreciate the immense importance and value of his services as a *health counsellor* and teacher of the art and science of living, for this, unless all signs fail, is going to be the chief function of the physician of the future.

There are several institutions in the country where this teaching is being done in a systematic and thorough manner and on a large scale. This should, of course, be the routine work of all *sanitariums* which are, properly speaking, places for teaching people how to *keep well*—as distinguished from *sanatoriums*, where sick people go to *get well*.

We spent our vacation at a place like that—one of the best known in the country—the *sanitarium* at Battle Creek, Michigan. There are hundreds of people there all the time, many of whom have visited the place several times. Some of them are sick; some are not very well; and some were there voluntarily, like us, so as to keep from having to go to some similar place as a matter of necessity.

We had our annual physical check-up while we were there (by the way, have you had yours? If not, you'd better attend to it at once), and it was a *good* one. They found

nothing wrong, but they put us through a course of baths and douches and swims and exercises and walks and volley ball in the open air, played in no other vesture than a breech-clout.

The diet consisted of fruits, vegetables, cereals, milk and eggs—no meat, condiments, tea or coffee—and we were hungry for every meal. The idea was to get the body rested, cleaned out and sweetened up. They did it!

They make no effort to keep people there until they are *well*. The effort is to keep them until they *learn how to live*, and then, if they practice what has been taught them, they can get well—and *keep well*—at home as well as anywhere else.

We may not agree with all of their ideas, but, somehow, the more one studies them and watches the effects produced, the more logical and reasonable their contentions seem. In any case, they are hammering home the laws of hygiene into some minds that never before entertained such guests, and they are doing a big work for the Medicine of the Future.

Incidentally, if you have a feeling that the job of health adviser and teacher of living is a poorly-paid occupation, you will have the surprise of your life when you see thousands of people giving up very considerable sums of money for just such instruction, and doing it cheerfully—yes, *eagerly*.

And if you've been afraid to tell obese old Mrs. Nonesuch to take a little more exercise and cut down her diet, for fear she would get miffed and hunt another doctor, you will nearly fall dead when you see her doing "one, two, three, squat," with a pair of dumb-bells in her hands, and submitting meekly when the dietitian gives her a prune or two for breakfast and dry toast and "minute-brew" for dinner. You might even get the idea that what she was holding in her hands somewhat resembled *you*.

Ignorance is the origin of most of our ills, of all sorts, and the greatest bar to progress. People *must be taught*, and if they happen to think, at the moment, that they do not desire instruction, it is part of our job to *make* them want it and to show them that it is *good business* to pay us for giving it to them.

Take up the doctor's burden, as a teacher. Learn how to live, yourself, and then you can teach others. Prepare yourselves for the next step in evolution, for the step will be taken, whether you are ready or not,

and then, if you have been one of the foolish virgins, the procession will move on and leave you wondering what hit you.

If I were to offer a prayer, it would be first for the spiritual excellence of our nation and next for its well-being in health. In order to effect the physically perfect nation, I would begin with the children.—Warren Harding.

### THE BACTERIOPHAGE

We should always take the attitude of tempering scientific enthusiasm with judgment and of waiting for sound and valid demonstration before we become unduly excited over new discoveries, but the work of d'Herelle and others, in connection with the bacteriophage, seems now to have reached a stage where we have reason to feel that we are on the eve of revolutionary announcements in the field of biology and medicine.

Dr. F. d'Herelle is no unknown and oversanguine youngster, but a very distinguished scientist with years of solid and valuable work; done in many lands, behind him, and has been the recipient of some of the highest honors which various learned bodies in Europe can confer upon an investigator. It is, therefore, hardly conceivable that he would make what bids fair to prove an epoch-making announcement before he had convinced himself of its validity beyond the possibility of a reasonable doubt.

Briefly, the story of his discovery runs thus: in 1900, in Mexico, while investigating an epidemic disease of locusts, he noticed that, in making cultures on agar from the feces of infected insects in the later or convalescent stages of the disease, he obtained colonies which showed an irregular contour or in which there were small, circular areas entirely free from growth. These observations stimulated his interest and led to further investigations.

His next studies dealt with Shiga's dysentery bacillus, and, after following false trails through many laborious experiments, he found that, in cases of dysentery, at a time when the patient took a turn for the better, a bouillon culture from the feces, grown over night and filtered, would, when the filtrate was added to a heavy culture of Shiga bacilli and incubated for ten hours, cause the complete disappearance of the organisms. When cultures to which the filtrate had been added were grown on agar slants for a few hours the same circular clear spots appeared as had been seen on the cultures from the locust epizootic.

From these and many other elaborate experiments, d'Herelle at length came to the

decision that he had found an ultramicroscopic organism which grew as a parasite upon certain types of bacteria and destroyed them, in somewhat the same way that the bacteria destroy their human or other hosts. This organism, or type of organisms, he gave the name of the *bacteriophage*, meaning "that which develops at the expense of bacteria."

Further studies revealed that the bacteriophage was not simply one organism, but that there are a number of different varieties, each developing at the expense of one particular kind of bacteria and having no effect upon others—in other words, that the various bacteriophages are *specific*.

To set forth in detail the various experiments by means of which d'Herelle arrived at these startling conclusions has required a volume of nearly 600 pages, most of which is of interest chiefly to laboratory workers, but several facts of clinical importance have already emerged.

Extensive experiments have shown that it is possible, by the injection of the bacteriophage, to immunize animals against a number of virulent bacterial infections.

In order to assure himself that the bacteriophage is harmless to man, d'Herelle himself took, by mouth, increasing quantities of Shiga bacteriophage cultures up to 30 cc., and hypodermic injections of 1 cc., without causing any reactions or unpleasant symptoms whatever. He also fed the cultures to several members of his family with the same results. Other workers have received as much as 5 cc. of these cultures, subcutaneously, without discomfort. In all cases the specific Shiga bacteriophage was recovered from the stools after twenty-four hours.

He was then ready to begin therapeutic experiments, and these were carried out upon proved cases of bacillary dysentery of the Shiga type. All of these cases had Shiga bacilli in their stools, and none of them showed a specific bacteriophage either for the Shiga bacillus or for the types of Flexner or Hiss. Some of the first cases were very severe, and all were treated with the bacteriophage, and nothing else. All showed marked improvement within twelve to forty-eight hours and all recovered. In Brazil, following the work of Dr. de Costa Cruz, of Rio de Janeiro, all other forms of treatment for dysentery are said to have been largely discontinued.

A number of cases of typhoid have been treated in this manner and the results have

been astonishing. In most cases there was a crisis, with sweating, within a few hours after the administration of the bacteriophage, and the temperature returned permanently to normal within twenty-four to forty-eight hours.

B. Coli infections of the kidneys and bladder, local and general staphylococcus infections, bubonic plague and several other diseases have already been successfully treated by means of *phagotherapy*.

The experiments of d'Herelle have demonstrated that the bacteriophage behaves, in practically all ways, like other types of microorganisms. It can be grown in cultures; passed through animals and man and recovered; exalted or attenuated in virulence, etc. Some other workers are now even reporting the development of an anti-bacteriophage substance, analogous to anti-toxins against bacteria.

Nor has the work of this great Frenchman stood alone, as is attested by a bibliography of more than 600 references, appended to his recent book; and the number of these references multiplies as enthusiastic workers all over the world take up this fascinating study.

What may all this mean to us, as physicians? Only the future can answer. But one can almost see a vision of a time when bacterial diseases will be a thing of the past—when, a specific bacteriophage having been developed against all known forms of microscopic invaders of the human host, all that will be necessary when any infectious disease declares itself will be to administer a few doses of the proper culture and the patient will recover.

And if this be possible, why may we not foresee a day when all human beings will be immunized, in childhood, against every type of microorganism that is likely to attack them, so that our descendants will live, in health, until they die of old age or as a result of accidents? Perhaps we are on the eve of one of those momentous *biological inventions*, discussed by Haldane in his "Dedaelus."

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Knowledge is proud that he has learned so much;  
Wisdom is humble that he knows no more.—Cowper.

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#### THE KINDRED BILL AGAIN

At least one of our readers was sufficiently stirred by our editorial in the July number to procure a copy of the Kindred Bill (also known as H.R. 9962) and give it

some careful study. After doing so he remarks, "I think this bill should have all the airing it needs among physicians before it becomes a law—which God forbid! A few more of these 'modern reformers' in Congress and all the professions might as well quit business. We are all incompetents and incapables in their estimation. What the country needs now is a wholesale elimination of this kind of representative."

The doctor speaks with great moderation, as you will agree if you will take the trouble to study this iniquitous bill; which provides, among other things, that the Government may take over any and all plants in the country for the manufacture of "opium, coca leaves, cocaine, or any compound, manufacture, salt, derivative, or preparation thereof." (In a later paragraph this is made to include "*any synthetic substitute for them.*") This taking over may be by condemnation or private sale, at a price to be fixed by the proposed Federal Narcotic Board.

The Board itself is to consist of five directors, appointed by the President, "by and with the advice and consent of the Senate," at a salary of \$12,000.00 a year (fine, fat place for political henchmen!), and the members are to serve for life ("during good behavior"—but we all know how much chance there would be of prying one of them loose).

The funds for paying these salaries and those of all the various "experts," "officials," "managers" and others whom they are empowered to employ, as well as the cost of conducting the investigations (!) upon which they will probably at once embark (giving more fat jobs for reliable political pick-and-shovel men who will "stand hitched") will come out of *your pockets and mine*, in the form of taxes—but that is the least of the dangers!

This abominable bill would make it unlawful for anyone but the Board to import, manufacture or sell any of the salts or preparations of opium or coca, and the Board would be the sole arbiter of the amounts of these drugs to be used by the medical and dental professions!

The general provisions as to registration, special taxes, licenses and the like are much like those of the Harrison law, but are more drastic. They also carry the added inconvenience of getting everybody concerned involved in the endless red-tape, quibbling and

delays that now seem inseparable from Federal procedure.

Cast your thoughts back over the conditions which obtained during the War, when the Government controlled almost everything—the chaos, inefficiency and graft which characterized the administration of the railroads, shipping, the building of cantonments, the production of aircraft and most other things. Remember the heart-breaking difficulty of procuring necessary drugs and the hopelessness of getting any action out of anyone concerned. Are you willing to return to such conditions in connection with drugs you are using every day?

Rarely has a group of men been endowed with such unlimited and autocratic authority over the welfare and even the lives of their fellows as it is proposed to give to this Board. What assurance have we that its members will be the high-minded, unselfish, altruistic scientists—yes, almost demigods—to whom we would be willing to delegate such power?

Already we have been hampered to a considerable extent, in our professional work, by Government enactments, conceived and promulgated by laymen who know about as much about the needs of physicians as a hog does about differential calculus. Are we ready to accept some more of the same?

If we want to get rid of the self-constituted "reformers," meddlers and other types of dangerous nuisances who now adorn (?) our legislative halls, NOW is the time. A congressional election will take place this Fall. Look up the records of your present senators and congressmen and see how they have voted on important matters. Are you willing to trust their disinterestedness, public spirit and judgment for a few years more? If not, get the hook—and tell them why you are doing it.

If you lack the real, true patriotism to go into this matter fully, *your own interests* dictate that you procure a copy of this bill from one of your congressional representatives, read it carefully and then tell everybody within reach what you think of it. Write to your senators and congressmen, of course, but do not stop there! Get others to write. Get your county society to pass resolutions. Make the popular denunciation of this disastrous measure overwhelming.

Our profession can wield an enormous political influence if we will only work in concert. Here is a big opportunity. NOW is the time.

# Leading Articles

## Etiologic Factors of Hydronephrosis

By W. R. CHYNOWETH, M.D., Battle Creek, Mich.

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THE term, hydronephrosis, is derived from two Greek words, *hydras* and *nephros*, which literally means water-kidney.

According to White, hydronephrosis is about twice as common in the female as in the male, and is most frequently found between 30 and 40 years of age.

The etiology of hydronephrosis comes under two distinct groups; (1) congenital and (2) acquired.

Under the congenital type, we have (a) malposition, i.e., ptosed and ectopic kidneys; (b) aberrant blood vessels, interfering with drainage; (c) renal anomalies, i.e., fused, polycystic and horseshoe kidneys; and (d) ureteral anomalies, i.e., duplicated ureters, diverticula, etc.

Various writers have reported the frequency of congenital cases. Braash reports 144 cases of ureteral duplication and is of the opinion that such anomalies are prone to develop into pathological and surgical conditions, hydronephroses being the commonest complication.

The acquired factors may be divided into (a) predisposing and (b) primary. The former include all conditions that interfere with drainage, such as calculi, ureteral strictures, traumatization, pressure from adjoining viscera, cystocele in women, etc.

The primary causes are unusually metastatic involvements from foci located elsewhere, such as tonsils, teeth, sinuses, seminal vesicles, intestinal tract, etc. Judd reports several cases of infected hydronephrosis, and mentions seeing a number of cases in adults in which there was dilatation of the kidney pelvis and ureters without demonstrable constriction of the ureters. Stirling says, "I have seen several cases in which the kidney, ureter and bladder were a large, dilated sac, the ureter being greatly distended, with no evidence of closure at the ureteral orifice. Whether the hydro-ureter was a result of the infection or the infection a result of the dilatation, I was not able to determine."

Judd divided "true hydronephrosis" into two distinct types: (a) hydronephrosis of the renal pelvis and (b) so-called internal hydronephrosis, in which the dilatation is confined to the calices of the kidney. He says the latter type cannot be due to obstruction. "The kidney is just a big sac, and some condition other than obstruction must be the cause."

### Symptoms

In considering the symptomatology, the main cardinal symptom is pain. This may vary from mere annoying distress to the severity of a Dietl's crisis. The character may be either dull aching or colicky pain, and may be localized or referred; constant or intermittent; unilateral or bilateral, and is apt to be the cause of mistaken diagnosis.

Richoles says that over 30 percent of a series of cases of hydronephrosis treated by him had had either an appendectomy or gall-bladder operation without benefit.

In reviewing a series of 300 cases of kidney infection, Stirling states that over 30 percent of the series had had an abdominal operation without relief. The preoperative diagnosis in this list of operative errors is given in the order of frequency: (1) Appendicitis; (2) Ovarian disorders; (3) Gall-bladder disease; (4) Malposition of uterus; and (5) Abdominal adhesions. He also adds, "Such a high percent of error in preoperative diagnosis, without careful urinary examination, is inexcusable."

In a series of 200 cases of renal infections recently reported by Dr. Martin and me, 14 percent were hydronephrosis, 33 percent of which gave a history of having been operated upon from one to five times without relief.

A palpable tumor mass is occasionally the result of a pronounced hydronephrotic condition, but, according to White, is as often absent as present. He also states that the passage of an abundant quantity of urine, terminating the attack, is a rare manifestation.

Inasmuch as the purpose of this paper is to present various cases illustrative of some of the etiological factors of hydronephrosis, a lengthy discussion of the symptomatology and pathology will not be given. For the sake of brevity, only essentials, of definite urologic value, concerning each case will be given in the summary thereof.

We have selected typical cases of conditions that are the primary causative factors of hydronephrosis, according to the following classification: (a) Congenital; (b) Ureteral strictures and tortuosities; (c) Aberrant blood vessels; (d) Movable and psoas kidneys; (e) Calculi; and (f) pregnancy.

Under congenital causes three cases will be presented, one of which is an ectopic kidney, one with supernumerary ureters, and one with spina bifida and a urachal type of bladder.

#### Case Reports

**Case 1.**—Mr. Frank L., age 41, married, a laborer, gives a history of intermittent dull pain in the left lower abdominal quadrant since childhood. The pain occasionally is referable to the lumbar region. It is associated with a sensation of heat in abdomen, not accompanied by gastrointestinal distress, chills, fever nor sweats. Lying in the prone position relieves it; whereas walking at times aggravates it. During the past two years the pain has become more severe and of greater frequency. He has, at times, had some frequency of urination with occasional bladder irritation since he was 8

years of age. There is seldom any nocturia and no history of hematuria or pyuria. He had an appendectomy ten years ago without relief of his distress.

**Cystoscopy.**—Bladder picture was negative. Right ureter was catheterized with a No. 5 lead catheter without difficulty; whereas a lead catheter was introduced only about four or five inches into the left ureter when definite resistance prevented further progress. The urine came more freely from the left than the right kidney. The left was clear and amber-colored; whereas the right was clear and colorless. The x-ray findings showed a congenital, malplaced, ectopic left kidney, which was hydronephrotic and contained a calculus, located in the pelvis opposite the first sacral vertebra.

**Diagnosis:** Congenital ectopic left kidney with intermittent hydronephrosis and calculus.

A pyelolithotomy was done by Dr. Martin, and a calculus about  $\frac{1}{2}$  inch in diameter was removed. Convalescence was fairly rapid and the patient, who was seen recently, reports feeling better than he has felt for years, with complete relief of his former distress.

**Case No. 2.**—Miss E. J., nurse, age 32.

Following an attack of influenza in 1919, the patient began having more or less frequency of urination. Two years ago she began having bladder irritation accompanying urination. This gradually became more pronounced during the past year. Distension of the bladder, or even walking, caused distress in the bladder. The pain varied as to severity and was usually felt in bladder and urethra and occasionally referred toward the left kidney. She described the renal distress as, "A drawing or tightening pain of the kidney." She has had a nocturia of two to three times for about three years and during the past year she has had to get up six or more times a night to void.

Two years ago she began having a dull, aching pain in the left renal region, referred down the left side to both legs. No nausea or vomiting. She had eleven cystoscopies, and two specialists diagnosed her case as a *B. Coli* infection of both kidneys. At the Mayo Clinic she was diagnosed as having the "elusive ulcer," for which operation was performed, but the patient says no ulcer was found. No history of hematuria or pyuria.

**Cystoscopy:** There was a moderate trigonitis with a chronic urethritis. No ulcerations were seen. She had a supernumerary left ureter which was constricted. In subsequent treatments this was dilated, allowing a catheter to be introduced into the kidney. Urine was free and equal in all three ureters; all clear and amber. In the phenol-sulphonephthalein test the dye appeared from the right ureter in 5 minutes, with an output of 20 percent; from the upper left in 5 minutes, with 10 percent; from the lower left in 3 minutes, with 8 percent; and the bladder showed 4 percent. Laboratory findings showed a *B. Coli* infection in all specimens. X-ray findings presented a left kidney with duplication of pelvis and ureters.



Case No. 1. Mr. F. LeV. Ectopic left kidney with large calculus in the kidney pelvis.

**Case No. 2A.—Dr. Geo. S., married.**

The patient first had an abrupt colicky pain in the left side, in December, 1925. The attack was of a few minutes' duration and accompanied by nausea but no vomiting, chills, fever nor sweats. The next day he had another attack in the left inguinal region, referred to left iliac crest. This lasted an hour. He was sent to the Presbyterian Hospital where he was told the findings were negative. A roentgenogram made at the hospital was also negative. Later he consulted a doctor in Ottawa, Ill., who did a cystoscopy and told him he found nothing wrong with the urinary tract. Since his last attack he has been having intermittent, dull, aching pain in the left inguinal region and in the small of the back. Recently he has had more or less severe, dull pain, at times, in the right side. Urinalysis on different occasions showed a trace of albumen. The urine was usually clear. No frequency and seldom any nocturia or bladder irritation.

**Cystoscopy:** Bladder wall was somewhat trabeculated. Prostate bulged somewhat, congested and sensitive to instrumentation. The trigone was moderately congested. The right and left ureteral orifices were well defined, and anterior to them were supernumerary right and left orifices with very small apertures which had to be dilated, by which maneuver the patient's distress was reproduced.

In the urinary segregation the urine was free from all four ureters, the amounts collected being: 1 cc. from upper right; 0.5 cc. from lower right; 3 cc. from upper left; and 2 cc. from lower left. That from the upper right ureter was clear and amber; from the lower right, bloody; from the upper and lower left, slightly turbid. In the phenolsulphophthalein test the dye appeared from the upper right in 4 minutes, with 6 percent; lower right, 8 minutes, with 4 percent; upper left, 5 minutes, with 3 percent; and lower left in 5 minutes, with 5 percent; and 4 percent from the bladder.

Injections of the lower ureters with normal salt solution and later with sodium bromide reproduced the patient's distress. Laboratory findings showed a trace of albumin in lower right and upper and lower left; leucocytes less than one per field in all specimens; negative for bacteria. **X-ray findings:** Bilateral fused kidneys with duplication of both pelvis and ureters.

The patient is still under treatment and not entirely relieved of his distress, but is a little improved.

**Case No. 3.—Nancy L. D., student.**

Suffered from enuresis when a child. Her bladder trouble was thought to be due to congenital spina bifida. Two and one-half years ago, urination gradually became more difficult so that she had to resort to catheterization. Her family physician thought she had an abdominal tumor and recommended surgery. She says, "The surgeon found a greatly distended bladder, but I don't know what else he found or did." Since her operation she has had to catheterize herself three times a day. She

is unable to void voluntarily, even though conscious of a full bladder. Whenever the bladder is distended she has a feeling of heaviness in the lower abdomen. She was under treatment at Johns Hopkins Hospital for three months, in 1921. She was referred by Dr. Hunner, of Baltimore, to Dr. Martin in December, 1922. He reported finding a urachus type of bladder. He states that, at the time of operation, the bladder was freed from the umbilicus, allowing it to settle in the pelvis. He also reported bilateral hydro-ureters and hydronephrosis, and that the urine has been more or less turbid for years.

**Cystoscopic findings:** Marked atomic urachal type of bladder, with extensive trabeculations and shallow diverticula. Both ureteral orifices gaped; ureteral catheterization not difficult. Urine from both ureters free; twice as much from the left as from the right; both slightly turbid. Phenolsulphophthalein test; dye appeared from the right in 11 minutes, and in 6 minutes from left kidney; percentage, right 4; left 10; bladder 0.

**Microscopic findings:** Pus cells, none from right; left, 3 to 4 per field; gram-negative bacteria from both kidneys.

**X-ray findings:** Bilateral hydro-uretero-nephrosis with possible cystic degeneration.

While the patient was under treatment her general condition improved, but when she discontinued it her health gradually failed.

While at home on a vacation, in August, 1924, she consulted Dr. Stattler, of Cincinnati, because of gradual failure of sight. He reported a grave, chronic, inflammatory disturbance of the internal structures of the right and only seeing eye which he termed a probably latent tuberculous trouble—a chronic, insidious, focal inflammation of the choroid of the right eye—an exudative or plastic uveitis.

After her return to us she was referred to the Mayo Clinic where they reported "a considerable degree of renal insufficiency, the blood-urea being 106 mg. per 100 cc. of blood and creatinin 2.8 mg.," and that they were unable to give her much benefit. We have not seen her since then and so cannot report her present condition.

**Ureteral Strictures and Kinks**

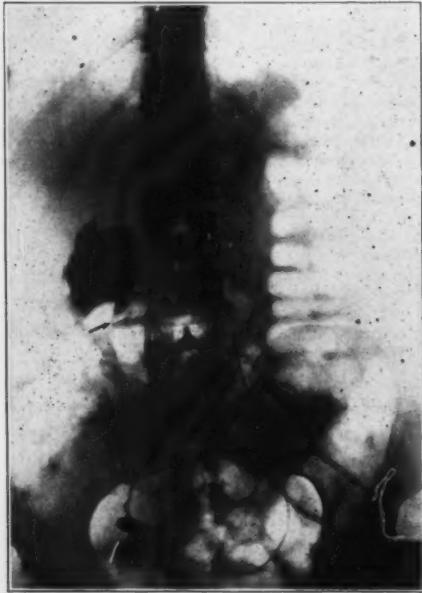
Hunner has long since called the attention of the medical fraternity to the part played by ureteral strictures in producing hydro-ureter or hydronephrosis. Braash states that, with a low ureteral obstruction, the dilatation will be primarily in the calices and secondarily in the renal pelvis; whereas if the obstruction be high up in the ureter the pelvis will distend to a relatively greater degree than the calices. Neff states that the increased intrapelvic pressure caused by strictures is exerted directly upon the secretory apparatus, thus interfering with tubular drainage and the intrarenal circulation, and results in final glomerular and tubular atrophy.

As to "kinks," it is not entirely clear how much importance is attached to their part in the etiology of hydronephrosis. In considering interference with free ureteral drainage, one must bear in mind that the ureter functions, not passively but by active peristalsis. Waves of peristalsis can travel as effectively around sharp curves as along normal straight ureters; nevertheless, Neff assures us, "There is a definite group in which kinks are of primary importance. They are seen as very sharp angulations of the duct or in flat, S-shaped twists."

The etiological importance of tortuous strictures is well illustrated in the following case:

*Case No. 4.—Mrs. Anna B., age 48.*

Gives a history of a dull, aching pain, extending up and down the right side of back, for a couple years, gradually becoming worse during the past six months. Pain was never severe and never colicky; was apparently localized and unaccompanied by gastrointestinal distress. No history of frequency nor of bladder irritation, but says that, at times, she will get up three or four times in a night to void. The urine is usually clear.



Case No. 4. Mrs. A. B. Large right hydronephrosis with stricture near uretero-pelvic junction.

*Cystoscopic vesical findings were negative. Both ureters were catheterized without difficulty. One-half cc. of urine was collected from the right kidney in five minutes, whereas 2 cc. was collected from the left. Both were colorless with white specks. In the phenolsulphonephthalein test, the dye*

appeared from the right kidney in 14 minutes, with 1 percent output; whereas from the left it appeared in 11 minutes, with 4 percent output, with a trace from the bladder. Unfortunately, the function test was not repeated.

The microscopic and bacterial tests were negative. The patient's distress was reproduced while doing the pyelography. X-ray findings showed a tortuous right ureter with a hydronephrotic right kidney.

**Aberrant Blood Vessels**

It is well known that aberrant blood vessels going to the lower pole of the kidney are etiologic factors in causing hydronephrosis. These fall in the congenital category, but just how they are etiologic factors has not been definitely shown. Kelly is of the opinion that, in many large hydronephroses, the vessels are drawn out of place and so seem to obstruct the ureter when primarily they do not. He believes that many times the aberrant vessels alone are not causative, but are so when combined with abnormal renal mobility. Neff states that such supernumerary vessels were the predominant factor in the obstruction in one of his cases.

The following case is selected from our series to illustrate this type of obstruction:

*Case No. 5.—Willis B., age 34, married, farmer. Ever since he was a child he has had intermittent attacks of dull pain in the right lumbar region, referred toward the bladder. At first the attacks were frequent, but they gradually became less so until he went nearly three years without an attack. During the past two years he has had rather severe attacks every two weeks. The attacks usually began by an increasing nausea and dull pain in the right side. Does not vomit, but has occasional chills and fever. Attacks last a couple of days and gradually abate, followed by increased urination. He passed bloody urine once, a year ago, and has noticed sediment in the urine at times during the past year. As a rule there is no nocturia, frequency or bladder irritation.*

*Cystoscopic findings:* Bladder findings negative. Right ureter catheterized without difficulty. Definite resistance in left ureter prevented catheter from passing up more than two-thirds of the way. Urine free from both kidneys, especially from the right side, and appeared in 10 minutes from the left kidney, with 18 percent output. Laboratory reported less than one leucocyte per field in right and three leucocytes per field in left, with no bacteria from the right; staphylococci from the left.

Over 30 cc. of 20 percent sodium bromide was injected into the right renal pelvis, and pyelography was done, after which 300 cc. of fluid was withdrawn.

*X-ray findings:* Right hydronephrosis with shadows in the course of both ureters.

The patient was operated upon by Dr. Martin, who found an enormous, boggy kidney, which was delivered without diffi-

culty, but there was a little extra bleeding, due to anomalous vessels under the course of the ureter. We have seen the patient on two occasions since operation and he reports feeling fine.

*Case No. 6.—Sister Helena S., age 36.*

She began having a dull, aching pain in the region of the right kidney two years ago which at times was referred down toward the bladder. At times gastrointestinal distress accompanied the pain. During this time she had intermittent rises of temperature from 99° to 103°F.



Case No. 6. Sister H. S. Strictured ureter due to anomalous vessel.

A year ago last February she was operated upon for duodenal ulcer. In April of the same year she underwent a second operation, for intestinal obstruction. Last October she was operated upon for adhesions, and again last December, when there was a "short circuiting of the intestines," 20 inches of the jejunum being removed.

A year ago last December she began having dull, aching pain in the small of the back, which radiated at times down the right leg. She has had frequency of urination for a number of years, with nocturia of two or more times a night for two years. Urinalysis made a year ago showed some pus cells present.

*Cystoscopy:* Bladder findings negative. A No. 5 catheter was passed about midway to the right kidney, and one an inch and a half up the left ureter, when resistance prevented further progress. Urine came very freely from both kidneys, 12 cc. being collected from the right and 8 cc. from the left in a 5-minute collection. Both urines were clear and colorless. In the phenolsul-

phonephthalein test the dye appeared from the right kidney in 4 minutes, with 3 percent output, and in 3 minutes from the left, with 11 percent output, 4 percent being recovered from the bladder. Laboratory findings were repeatedly negative. Injection of the right kidney invariably reproduced the patient's distress.

*X-ray findings* show a kink in the right ureter near the kidney which "presents the appearance of the ureter being hooked over some obstruction, as an anomalous vessel or some fibrous band."

*Diagnosis:* Pathologic right kidney, simulating intermittent hydronephrosis.

Nephroscopy was recommended. This the patient had done after going home and a recent communication from her confirms our findings. Since her operation she has gained considerable weight, looks better and feels better than she has for a long time. Apparently completely relieved of her pain.

**Movable Kidney**

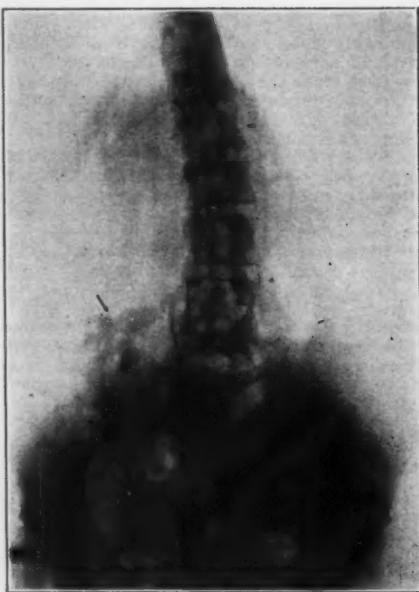
Another common factor in producing intermittent hydronephrosis is the movable kidney. There may be but a limited mobility of the kidney, yet it may cause an impingement of the ureter in such a way as to be productive of severe pain, in case of complete or nearly complete obstruction, or of a less severe pain if but partially obliterated; or the kidney may be of the "floating" type and be found anywhere in the abdomen. It is obvious that such a kidney is likely to produce all manner of obstructions of the ureter which would produce pain of a variable nature, as well as materially damage the kidney structure through increased intra-pelvic pressure caused by the ensuing faulty drainage.

*Case No. 7.—Miss Louise W., age 38, single, nurse.* Began to have intermittent, dull, aching attacks of pain in the upper right quadrant 15 years ago. At times the pain was accompanied by nausea and vomiting. Since then she has had several attacks of variable severity. The past three or four years the pain became more colicky in nature and was referred down the right side, toward the right hip and small of the back. Recently she had a "sharp pain, like a toothache," in the left side, which gradually went away.

An x-ray, made while in a hospital at Huntington, Ind., showed the right kidney to be enlarged. For a number of years repeated uranalyses have shown pus and albumin.

*Cystoscopy:* Bladder findings negative. Both ureters catheterized without difficulty. Urinary flow was free and equal from both kidneys, the urine from both sides being clear and colorless. In the "P.S.P." test, the dye appeared from both kidneys in 5 minutes, with 8 percent output from both kidneys and 2 percent recovered from the bladder.

Microscopic and bacterial laboratory tests were negative, as well as guinea pig tests.



Case No. 7. Miss L. W. Movable right kidney.

Injection of the right renal pelvis with sodium bromide reproduced the patient's pain in the small of the back, but not in the upper right quadrant.

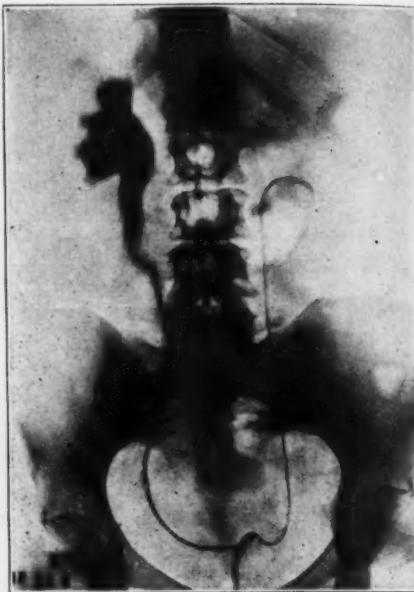
*X-ray findings* showed a ptosed right kidney with strictures of right ureter.

She had a nephropexy of the right kidney and later a cholecystectomy. Her convalescence has been uneventful and she feels better now than for years. When last seen she reported complete freedom from the pain in the side.

#### Case No. 8.—Mrs. Margaret D., age 48.

Patient says that 20 years ago she had an attack of cystitis, following which she noticed a dull, aching pain in the left side. Since then she has had a number of similar attacks of pain in the left side, especially noticeable recently in the left renal region, and referred down the left side. The pain has usually been of a dull nature, but at times was more colicky. It is sometimes accompanied by nausea and vomiting. During the past two or three years she has had attacks of bladder irritation accompanying urination. She seldom gets up at night to void and no frequency is complained of. Last winter she had a severe colicky attack in the left renal region, also in the right renal region. Medication was necessary for relief of pain.

*Cystoscopic findings:* The bladder picture was that of a chronic cystitis. Both ureters were catheterized without difficulty, although the catheter was passed only about midway up the left ureter. Urine from the left kidney was three times the amount from the right and was clear; whereas that from the right was somewhat turbid. In the



Case No. 8. Mrs. M. D. Large ureteral calculus in left ureter.

"P.S.P." test, the dye appeared from the right kidney in 3 minutes, with 10 percent output, and from the left in 14 minutes, with 2 percent output, and trace from the bladder.

*Microscopic examination* was negative, but the bacterial report showed many gram-positive, spore-bearing organisms from both kidneys.

Injection of 35 cc. of sodium bromide solution into the left ureter reproduced the patient's distress.

*X-ray findings:* Large, elongated stone in the left ureter, with uretero-hydronephrosis.

Surgery was recommended. Nephrectomy and uretero-lithotomy was done by Dr. Martin. Patient made a very good recovery.

*Case No. 9.—Mr. Jacob E., age 48.* He gives a history of an abrupt attack of sharp pain, localized in the right renal region, when 18 years of age. No nausea, vomiting, chills, fever nor sweats. He had no further discomfort until two years ago when he had a colicky attack in the right side, referred down the right leg and to the testicles. No gastrointestinal distress accompanied the attack. Since then he has had a "sense of weakness" in the right renal region. He seldom has frequent urination, no nocturia and no bladder irritation. The urine has been cloudy, off and on, for a year. Recent urinalysis showed blood cells and pus.

*Cystoscopic findings:* Large calculus in the bladder. Trigone distinctly congested, with some edema bullous in the right; ridge bulged somewhat. Left ureter catheterized without difficulty. Catheter entered the right ureter about two inches when an obstruction prevented further progress. Three



Case No. 9. Mr. J. B. Multiple calculi in right ureter and large calculus in bladder. (1) Calculi in ureter. (2) Calculus in bladder.

(3) cc. of urine was collected from the right ureter and 1 cc. from the left. The right was clear and pale amber; left somewhat turbid. In the "P.S.P." test the dye appeared from the right kidney in 9 minutes, with 4 percent output, and from the left in 5 minutes, with 4 percent; 10 percent was obtained from the bladder. Laboratory findings negative for pus and albumin. Gram-negative bacteria in all specimens.

*X-ray* showed a calculus in the bladder and multiple calculi in the right ureter, near the bladder, with hydro-uretero-nephrosis.

A suprapubic cystotomy and cystoureterotomy was done by Dr. Martin, and four fairly large calculi were removed. The patient made an uneventful recovery and feels better than for years. A subsequent segregation of the right ureter established the fact that the drainage was free and the right kidney functioning satisfactorily.

*Case No. 10.*—F. D. F., age 56, married. Had a dull, aching pain, of intermittent character, in right renal region for past four or five years. The pain has never been severe and never colicky. He has had hematuria a number of times during the past five years, with more or less frequency. Nocturia two or three times and occasional bladder irritation. Recently noticed some hesitancy and a tendency to dribbling. Urine has been more or less turbid for the past two years.

*Cystoscopic findings:* Bladder wall somewhat trabeculated, with chronic cystitis of moderate degree. Left ureteral orifice gaped considerably. Right ureter catheterized without difficulty. The catheter passed about midway up left ureter, when resistance pre-



Case No. 10. Mr. F. D. F. Large calculus in right kidney

vented further progress. One cc. of turbid urine collected from the right kidney; one-half cc. clear urine from left. In the "P.S.P." test, the dye appeared in 12 minutes from the right, with 3 percent output, and in 4 minutes from the left, with 12 percent and 4 percent from the bladder. Laboratory findings negative.

*X-ray findings:* Large calculus filling pelvis of right kidney.

This kidney ruptured spontaneously while the patient was in the hospital, necessitating a nephrectomy. The patient convalesced slowly and died at home some time later of heart trouble.

*Case No. 11.*—Mr. Chas. S., age 44, married, clerk. He had had intermittent, dull, aching pain in left renal region for a number of years. At first it was localized; later referred down the left side. His physician told him it was "neuralgia." In 1920 he consulted a urologist in Albany, who told him he "had stones in both kidneys." Later he consulted a urologist in New York, who verified the findings. Since then the pain in the left side has gradually become worse. A guinea pig test, made while in Albany, was negative. He gives no history of frequency or bladder irritation. Urine has been more or less cloudy for a couple of years.

*Cystoscopic findings:* A moderate grade of cystitis. Both ureters catheterized without difficulty. Two cc. of slightly turbid urine collected from the right kidney and 2 cc. of clear, pale-amber urine from left. In the "P.S.P." test the dye appeared from the right kidney in 8 minutes, with 3 percent output, and in 20 minutes from left with a trace, and 2 percent from the bladder.



Case No. 11. Mr. C. S. Large left hydronephrosis with stricture at uretero-pelvic junction caused by aberrant vessel and calcareous degeneration of lower pole of kidney. (1) Hydronephrosis. (2) Stricture. (3) Calcareous degeneration.

**Laboratory findings:** One pus cell per field from the right and trace of albumin; 5 pus cells per field from the left and trace of albumin. Culture showed staphylococci in all specimens.

**X-ray findings:** Large hydronephrotic left kidney undergoing calcification. Surgery recommended, but patient went home before it was done.

#### Pregnancy

In cases of pregnancy we are apt to find hydronephrotic conditions quite commonly, because of the obstruction offered by the pregnant uterus, causing pressure on the ureters. Sometimes the condition is of grave omen to the expectant mother because of possible damage done to the kidney as well as possible infection that is apt to develop. Pyelitis of pregnancy is difficult to cure and often requires drainage for a long time. The following case is presented to illustrate this type of obstruction:

**Case No. 12.**—Mrs. Martha L., age 25. In December, 1924, she had an abrupt attack of "cramps in the abdomen," referred to both hips and legs. Later the same month she had another attack which she describes as "a pushing-in pain in the abdomen and a pulling of the right side." This was accompanied by backache, nausea and vomiting. She consulted a doctor while in Columbus, Ohio, who told her he thought she had a miscarriage. Since then she has had a



Case No. 12. Mrs. M. L. Hydroureter resulting from pressure from gravid uterus. (1) Hydroureter. (2) Obstruction. (3) Fetus.

number of similar attacks. Recently she had an abrupt colicky attack in the right side, referred down the right leg, accompanied by nausea and vomiting, but no chills, fever or sweats. Following the attack there was some polyuria with cloudy urine. She has had a nocturia of one or two times for the past eight months, during which time she was pregnant. Recent uranalysis showed pus in the urine.

**Cystoscopic findings:** Bladder negative, with the exception of moderate cystitis. Both ureters catheterized without difficulty; urine return free and equal from both kidneys. Right urine was turbid, left clear. In the "P.S.P." test, the dye appeared from the right kidney in 8 minutes, with 6 percent output, and left in 6 minutes, with 7 percent; trace from the bladder.

**Laboratory findings:** Right, albumin; leucocytes, 12 per field; Gram-negative bacilli. Left, albumin negative; leucocytes 7 per field; Gram-negative bacilli.

**X-ray:** Fetus at full term. Right, hydro-uretero-nephrosis. **Diagnosis:** Bilateral *B. Coli* infection, with hydronephrosis of right kidney. A subsequent x-ray examination shows a duplication of the left renal pelvis

#### Treatment

As a fitting conclusion to the presentation of these cases a brief reference to treatment may be apropos. You can readily see that, in the first place, a thorough urological study should be made in all cases of obscure or uncertain diagnosis, after which conserv-



Mr. E. B. Multiple strictures of left ureter. (This case is not described in the text, but the skiagram is interesting in this connection.)

ative or radical measures may be instituted as soon as feasible, as the case demands.

A recent report from the Mayo Clinic states that 475 nephrectomies were required in the treatment of 503 cases of hydronephrosis. Such percentages are unfortunate

and give evidence of the late stage at which most patients submit themselves for operation. In the early stages of hydronephrosis conservative measures are naturally indicated; whereas later stages clearly indicate nephrectomy.

Judd says, "If intermittent hydronephrosis is producing severe pain, it is better to have it out." Hinman has shown that if hypertrophy of one kidney has occurred, as a result of damage done to the other, it is questionable whether a normal condition can be reestablished. He has also shown that function in a damaged kidney cannot be reestablished, so long as the other remains normal.

Unfortunately, there is a class of hydronephrosis in which it is difficult to decide between conservative and more radical measures, hence it is better to do everything possible to improve the kidney condition even if nephrectomy will eventually have to be resorted to.

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## The General Practitioner and the Specialist

By J. C. CLEMESHA, A. M., M. D., Buffalo, N. Y.

**A**T THE present time there seems to be considerable controversy regarding the status of the general practitioner of medicine. Of course, as would be expected, the specialist thinks they are very mediocre people, whereas, the general practitioner thinks the specialist a one-track individual who believes that all diseases, no matter of what nature, have their origin in his chosen zone.

Very little authentic information is at hand as to the beginning of disease. In the Old Testament we read of diseases of that day which were undoubtedly due to infection or contagion. We have no way of telling the number of diseases then existing, but today we know that there are close to four thousand distinct maladies affecting the human race. It is true that in some of these the symptoms overlap each other to

such an extent that it is often almost impossible to differentiate between them; yet, to the man who has made a special study of any certain part, evidence sufficient to make a differentiation is available.

Where there is a true underlying cause which is easily and quickly discovered, the conditions are known as pathological, and they have a physical basis to account for them. But, whether it is due to evolution or not, today we find a class of diseases in which there is an entirely different symptomatology, and no cause is evident to the naked eye, even a most careful physical examination showing practically nothing wrong of a pathologic nature.

#### Fads in Medicine

It may be true that results have not been forthcoming in the manner that the medical man has wished for, or suffering humanity

demands. In any case, during the past few years, we have observed a great many fads in medicine. To account for all of these, flat feet, appendixes, movable kidneys, and the like have been brought forward as a supposed cause of the trouble, but it is evident they have all failed as an explanation, for, no matter what be the ailment today, local foci of infection are given as the cause, and every specialist, except the oculist, has located these in his own chosen field.

Local foci have been in vogue but a short time, but it is clearly evident that one more hypothesis has failed, for judging from what people tell us, few receive any marked benefit from submitting to operations for their elimination. Tonsils, teeth, sinuses, appendix; these were put in the human being for a purpose, and their indiscriminate removal is not only a serious error, but is one of the chief causes of many of the unexplainable conditions that we find arising in the people of today.

It is undeniable that the person having the most knowledge and ability to apply it will be the most successful; but it is the same in medicine as it is to the specialist in the law, or any other profession, he must have a well-founded, elementary basis to stand on. This elementary basis is, to a great extent, gained by college work, but an almost equal amount, especially as to results, is obtained by experience.

#### General Diseases With Special Symptoms

The human body must be looked upon as a machine with automatic action, the function of one part of which depends entirely upon that of another, at times in close proximity, at others remote therefrom. In headache, for instance, the *symptoms* may be confined to the head, but the *cause* may be situated in the kidneys, liver, uterus or other distant parts. I have observed patients with headache, at times, and marked pain in the soles of the feet relieved at once by the dilatation of a stricture.

This point has been well considered by prominent oculists, one of whom has said that before treating the eyes, except for refractive errors, he prefers the patient to be thoroughly gone over by a general medical man so as to ascertain the conditions of other parts and organs. Another says, "Fully 80 percent of diseases of the eye, outside of refractive errors, have a cause outside the eye, and we are incapable of ascertaining what it is, and if we could, we are not capable of caring for the condition."

Drawing conclusions from such statements by members of the oldest known specialty (and it applies with equal force to all), the general practitioner should conclude that he still has some standing; and if he will but use the information that he has gained from being a "general specialist," and apply the same with reason, he will find there are a great many cases that he can handle as successfully as the man tied down to one certain field.

If past history can be used as a criterion, not since the landing of the Pilgrims upon these shores has there been a time when people have sought medical advice more than they are doing at the present day. It is true that epidemics such as typhoid, and other contagious fevers have been practically stamped out and tuberculosis has been reduced fifty percent, but the death rate due to cardiovascular diseases has increased in proportion. We have stopped the leaking roof, but it has fallen in on account of defective understructure.

Scarcely any physician, even the neophyte, becomes greatly perplexed when meeting with organic diseases. Symptomatically they appear the same as they did hundreds of years ago—yes, almost as far back as Hippocrates. Fever, quickened pulse, pain that is located at or near the seat of trouble, facial evidences of illness; these are obvious, and we can prove the conditions by the stethoscope, microscope and by physical examination.

#### Functional Diseases

It is the other class, the functional cases (and these constitute about 75 percent of the ailments of today), that cause us trouble. Here we find, not a localized symptomatology, but all parts of the body more or less involved, and all at the same time. These patients are usually of the ambulatory variety. They not only drift about in their daily existence, but they drift from one doctor to another. We are realizing quite forcibly today that many of them do not always reach the office of one of our profession, but that of a class that we term "cultists." We know that, at the present time, there are too many people who do not know whether they are going or coming. But one thing is very sure; we, as medical men, know that these irregulars know nothing of the diagnosis of disease and, eliminating results that are produced psychically, they have no knowledge of treatment not possessed by one of the old "grandmother advisers" of times past.

In these functional diseases fever is rarely observed but pain is never absent in any case. It may be neuritic, neuralgic or indefinite. It is rarely stationary. Located in the upper part of the body today, tomorrow it may be in the lower region. Of course, the various symptoms described by the patient would be classified by the specialist into distinct diseases, and nothing else can be expected than that each would locate not only the disease but the cause in his own zone.

But it must be admitted that the symptoms do have an affinity for certain parts, even though the cause, in fully ninety percent of them, may be the same. Thus, at times, interference with vision may be the only predominating symptom, but it is soon accompanied by headaches, etc. The gastrointestinal tract comes in early for involvement. Distress occurs after eating, accompanied by gas and "heart burn." There may be either diarrhea or constipation. Excessive secretion is a symptom met quite early, especially in women, in the form of leucorrhea, or of catarrhal conditions involving the upper air passages, in both sexes.

Nerves cannot speak. Their word for injury, irritation or hunger is pain. Pain is one of the most common symptoms met with, not only in functional but in organic conditions. It can arise from but one place—the nervous system. One step further: It is generally conceded that the nervous system is the power behind all organs; all resisting power arises therefrom; in fact, with the help of the blood, it maintains life.

We realize that the blood requires nutrition, the same as bone and muscle; so also the nerve cells. The subject of nerve cell nutrition is not new. The writer has used for years a method of ascertaining its adequacy with gratifying results to himself and to his patients. In the examination for anemia, we study the blood; for the nervous system, the alkaline phosphates, as found in the urine, supply the information. These are never observed, except after precipitation, and they show not only the amount of nutrition in the cells, but how it is being used.

#### The Phosphatic Index

The method for testing the phosphatic index is so well known that only a brief description is necessary. (See CLIN. MED., Oct., 1920, p. 667.) It can be carried out by any practitioner in a few minutes and will be found to give information of the

most valuable nature; in fact, I might go as far as to say that it is one of the greatest aids the general practitioner has had offered to him in the past decade.

Use the second urine passed in the morning (about 10 A. M.). Fill the phosphatometer with urine to "U"; add solution (Magnesium sulphate; Aqua Ammonia, 10 percent; Ammonium chloride; each one ounce; water 8 ounces; mix and let stand for a few hours to a day before using) to "S"; shake thoroughly and set aside for ten minutes. The urine mixture will generally turn white at once, the precipitate falling to the bottom according to the density of the crystals. Alkaline phosphates appear in crystal formation and never under any circumstances have been observed except after precipitation.

If the nervous system is functioning normally, and nutrition is adequate (as will be shown by the crystals, which appear fern-shaped, having well-formed fronds), and if, at the end of ten minutes, the precipitate remains at "N. P." in a fairly solid mass, no matter what may be the symptoms, what part of the body is involved or what is found, the nervous system as a cause can be eliminated.

When the precipitate does not sink, is light and fluffy, or goes below "N. P." (phosphatometer), it indicates a want of nutrition. If such a condition is found (and this test should be used in every case that is troublesome or does not respond to well-directed and rationally-applied treatment), the nervous system will be found to be the seat of the trouble in fully 90 percent of cases. To prove that such is the case, if nerve cell nutrition is supplied artificially, the response will be surprising to both patient and physician.

When the precipitate remains above "N. P.", in a fairly solid condition, it indicates a hypersensitivity or irritation of the neurones; metabolism is increased above normal, and if the condition is allowed to continue, sooner or later it will end in a depletion of the reserve, with a line of symptoms very distressing to the individual—collectively termed neurasthenia.

One case very briefly reported must show what the general practitioner could, or rather should, have done.

Miss S., age 28, school teacher, referred on account of vision. Any exertion with the eyes, as reading, sewing or the like, was accompanied by most distressing symptoms, such as headache and neuralgic pains over the eyes.

History of the case showed that she had been suffering for at least a year, the first symptoms being distress after eating with the formation of a large amount of gas. This was accompanied by most obstinate constipation; leucorrhea which was so bad it was necessary for her to use a napkin constantly; and insomnia had so developed that she could get only a few hours of sleep without a sedative. She had visited several physicians in her home town, but seemed to get no relief; finally she was referred for the eye trouble.

Slight muscular imbalance was found and glasses were ordered, but with the exception of transitory relief, she obtained no benefit in three weeks. At this time she was referred back with the suggestion that the phosphatic index be taken; a thorough examination of the urine was also requested. The report read, "No pathological condition found; 90 percent minus (below N. P.), crystals all show great nerve cell starvation."

The following prescription was given:

B. Res. Podophyl.	grs. 3
Fl. Ex. Valerian	Oz. 1
Co. Phos. Tonic (Dowd)	Oz. 2*
Glycerine qs. ad.	Oz. 6

Sig.—One teaspoonful in milk, half an hour or so after meals.

\*This "tonic" is composed of Tr. Nux Vomica, 20 minimis; Ext. Cannabis Ind., 1/12 grain; free phosphorus, 1/100 grain to each dose of 30 minimis. It would seem best to use the phosphorus in the form of the spirit, as the drug itself is hard to handle and not freely soluble, even in alcohol.—Eo.

The change in this young woman, in two weeks, was such as I have scarcely ever observed. Practically every symptom had disappeared; she was sleeping all night, had no leucorrhea and not only had gained three pounds in weight but had no further use for the glasses. Had this young lady's phosphatic index been taken at the onset of her trouble, she could have avoided not only the years of suffering but a call on the specialist.

The writer is an ophthalmologist, and this paper was written because it has been found that cases in which the symptoms were confined to the eyes had frequently to be referred back to the physician to treat the underlying cause in some distant part; and after that was done the eye symptoms quickly subsided.

Ninety-five percent of sick people visit the family physician first for advice. Give them results and they will be contented and happy.

With no two people in the world exactly alike, medicine can never become an exact science and our only hope is doing the best we can. As functional cases constitute fully seventy-five percent of the illness that we find present today, and as the nervous system is at the bottom of at least ninety percent of these, why not make that the goal of assault in ascertaining the cause?

55 North Pearl Street.

## The Early Recognition and Treatment of Croupous Pneumonia\*

By G. J. WARNSHUIS, M.D., Milton, Wis.

THE early recognition of pneumonia is a problem of more immediate concern to the general practitioner (the "Specialist in Emergencies") than to one whose practice is limited to consultation and hospital work. While it frequently confronts the surgeon, it usually is under circumstances that permit a more leisurely diagnosis, more prolonged observation and the use of x-ray facilities. The general practitioner must, on the other hand, often rely on subtle suggestions received from the patient's actions and symptoms, the full significance of which can be determined only by a discriminating comparison with previous experiences.

The importance of being able to recognize such signs is well illustrated by a case I attended three years ago. The patient was

a child, two and one-half years of age, who was taken suddenly with convulsions on a "rare" day in June. (Pneumonia in June is not such an unusual occurrence as many imagine.) There was a history of vomiting and diarrhea.

On examination, there was nothing about the throat, cervical glands, ears, or thorax to suggest an infection of these parts, although the mother stated that the family had just been having colds. The abdomen was not distended. There was some elevation of temperature. I had about concluded that the trouble was in the intestinal tract and was preparing to leave some bismuth and soda tablets, etc., when the child coughed. There is an ominous quality about a pneumonia cough—a peculiar dry, short, hollow sound, entirely different from the high pitched cough produced by a spasmodic contraction of the pharyngeal muscles. I

\*Read before the Richland County Medical Society, August, 1925.

made a diagnosis of pneumonia on that cough and the next day it was amply confirmed by the presence of numerous rales, sputum, flushed face and other symptoms.

#### Early Symptoms

The onset of lobar pneumonia is always abrupt, although, as Holt points out, the prodromal symptoms are much more pronounced in children than in adults. These may lead to some confusion in ascertaining the presence of a pulmonary invasion, as a child may often have a good deal of fever and malaise with an ordinary cold. In infants under two years of age, however, the infection of the lung tissue is usually signalled by vomiting and occasionally by convulsions. The same symptoms frequently occur in older children but they may complain of chills instead, or there may be chills and vomiting, followed by fever. In bronchopneumonia we seldom have this sudden onset.

The chest findings are atypical in infancy. It is very seldom that dulness or bronchial breathing can be detected. The changes that can be discovered are those resulting from an emphysema of the unaffected lung—a more tympanitic note in percussion and louder breath sounds without a change in cadence.

A helpful sign is the frequent disproportion between the dyspnea and the fever. This, in the absence of a distended abdomen, is significant. The presence of congestion of the pharynx, enlarged tonsils and cervical glands, nasal discharge and a running ear should also direct attention to the lungs.

The diagnosis is frequently made by exclusion. In the absence of positive findings, a temperature persisting after the usual measures for a cold have been applied should make a tentative diagnosis of pneumonia possible.

Shortly after the appearance of these symptoms, there may be physical signs of consolidation. In children over three years of age these are the same as in the adult.

The breath sounds, however, are not accentuated in the first few hours of the disease, even though there is a roughening at the end of inspiration over the infected lobe and a definite dulness exists on percussion. I have thought of this as the stage of congestion; that is, inflammation exists, the capillaries in the alveoli are distended, the air cells are reduced in size, but no exudate has yet been formed. There is no doubt in my mind that this distinction exists and can be readily ascertained. I have as-

sured myself, after repeated experiences, that there does occur a very decided change in the breath sounds after the first 24 hours of the disease and this may even be delayed 48 hours. I have never seen any mention of it in the literature and yet I am sure many of those who have had the opportunity of seeing these early cases from the outset will bear me out in this. Too many of our conceptions of disease rest upon descriptions of the advanced forms.

During this stage of congestion it is often possible to "break up" the pneumonia by comparatively simple measures. Before I had the opportunity of seeing these early cases I was always rather skeptical about the stories I heard about breaking up an actual pneumonia. I shall describe a case of this kind to demonstrate just what I mean.

#### Cutting the Attack Short

A boy, age 11 years, was first seen at his home at 11 P. M., Dec. 13, 1924. Taken with fever and a cough three days before, he did not appear to be very sick until the night I saw him, when he refused to eat and complained of a chill, after which he became very feverish and short of breath. Dulness and rales were present in the right axilla. The inspiratory sound was increased and roughened in this location, but there was no lengthening of the expiratory sound nor change in its relation to that of inspiration. The abdomen was distended. *Treatment:* A high, tepid enema at once. Mustard plaster, 3 to 1, over right side of chest, kept in place one hour. Heat to feet. Sodium bicarbonate gr. V.

The temperature next evening was 100.5° F. Six minims of mixed influenza vaccine were given. There was no return of fever and the patient was up and around in a few days.

This case is cited because it shows how readily what threatens to become a dangerously septic condition can be nipped in the bud by applying the proper stimulus to an over-burdened liver and promoting an adequate vasomotor response to the toxins present in the blood stream. I have seen quite a number of other cases with like results but as I always used a subcutaneous vaccine inoculation in connection with these measures I could not judge how much of the benefit was derived from the vaccine. It is extremely important, however, that we make this distinction as we can invariably prognosticate a cessation of the alarming symptoms in 24 hours when we are able to introduce our abortive procedures during the stage of congestion. Furthermore, after the actual hepatization of the lung has taken place we must be far more judicious in applying our treatment or, in-

stead of stimulating, it may actually depress the patient's immunizing mechanism; as, for example, the practice of sweating, which has a deserved popularity among the laity and is not to be condemned if used early in the milder cases.

#### Breaking Up Colds

I have a definite technic for breaking up colds that is almost invariably successful and prevents the development of pneumonia. I give the patient several 5-grain aspirin (acetylsalicylic acid) tablets, to be taken one every three or four hours, according to size and vigor of patient. I instruct him to take a hot foot-bath before he goes to bed and the secret of success is to be very precise and emphatic in these instructions. "Soak the feet in water as hot as you can stand it for fifteen minutes. Keep adding hot water as it cools. Be sure you soak them for at least 15 minutes or you may not get a reaction. While they are soaking have a blanket warming by the fire. Dry your feet, put on socks or slippers so they will not become chilled. Drink a glass of hot lemonade and take one or two tablets and get into bed. You will have a good sweat and the cold will be loose in the morning. It is well to be a little careful the next day about getting chilled." The acetylsalicylic acid may be continued later if desired, in a robust patient, but do not overdose with it. Aspirin is indicated in these cases not only for the symptomatic effect but because it stimulates a temporary leukocytosis.

#### The Heart and Nervous System

Much has been said about the support of the circulation in pneumonia. This is a good feature to consider in any severe illness but it is over-emphasized in these cases, and in children, particularly, the cardiac symptoms are not the most conspicuous. I have seen only one case in which death could be directly attributed to cardiac failure. This was a man of past 50 whose heart was greatly dilated, with a loud, systolic murmur evident and there was a history of violent exertion during the course of his pneumonia.

My experience in pneumonia has led me to the opinion that it is toxemia—an exhaustion of the central nervous system—that produces the most alarming symptoms. For this reason we should be rather circumspect in our administration of narcotics and coal-tar derivatives, as the sedation produced by the former is accompanied by a tendency to inhibit glandular secretion;

while the latter drugs exercise a depressing effect on the nervous system and so on muscle tone, including the vasomotor system and the intestinal tract.

Judicious hydrotherapy and heat to the lower extremities, eliminative measures and mental suggestions are all means which frequently assist in combating delirium and restlessness. In this connection we must not overlook an important factor recently brought out in an address by Eugene Riggs; that is, the sedative action of calomel. As an intestinal antiseptic and a cholagog nothing can take the place of calomel, given in small doses and not repeated too often.

#### Bacterial Vaccines

Although the case described above illustrates how readily pneumonia may be aborted by extremely simple measures, when they are correctly applied, our results will be far more positive and certain and a more lasting immunity will follow if we use a subcutaneous injection of a stock bacterin made from active cultures of the common nose and throat organisms. A pure pneumococcus suspension is neither indicated nor productive of as good results as a mixture of pneumococci, influenza bacilli, streptococci and staphylococci.

From the standpoint of therapeutics we make little distinction between the frankly lobar (pleuropneumonia), the central or influenzal variety; and the bronchopneumonia types, as in all of them we have a condition of septicemia and pulmonary disease.

The methods we found so successful in the influenza epidemic have proved equally adaptable to these conditions. Taking these cases of acute pulmonary infection as a group, comprising, roughly, more than 400 cases (and I include in this only those cases of influenza that presented definite physical signs of pulmonary involvement), there was a mortality of less than 3 percent. Until I am convinced that vaccines are dangerous and useless in these conditions and am shown a mortality at least half as good as that without their use I am going to work along these lines.

It is regrettable that so much prejudice has been built up against the use of bacterins in these acute infections that one still feels the need of apologizing for suggesting such a measure. As I pointed out, two years ago, the theory that the subcutaneous injection of a vaccine is adding more antigen to a blood stream, already overloaded with foreign protein and toxins, fails to take into account several well-estab-

lished biological facts. The benefit derived from such injection lies in the reaction of the fixed tissue cells with which the antigen comes in contact and which are not stimulated by the bacteria in the blood-stream so long as the vessel walls separate the two. Wassermann's experiment demonstrates this beyond equivocation.

Not only is the mortality greatly reduced by such inoculations but the course of the disease is always shortened and sometimes abruptly aborted. Complications are avoided and convalescence is much more rapid than in cases I have observed that did not receive vaccine.

#### Dosage of Vaccines

As a basis of dosage I consider 8 to 12 hundred million organisms an initial dose in an adult weighing 160 lbs. Children under six will tolerate a dose of 1 to 2 hundred million. I have seen two febrile reactions following very large doses, such as four thousand million, and occasionally there is a slight feeling of depression and backache about six hours after inoculation, lasting about two or three hours, when fever is present. There is often a marked increase in temperature and other symptoms at this time. Such reactions are always beneficial but they are not essential to good results. Sometimes such a negative phase does not appear and the improvement begins immediately.

Usually the first signs of a decreased toxemia appear about twelve hours after inoculation. Even where a marked change in the symptoms occurs it may not manifest itself clinically until 36 or even 48 hours have elapsed. If there is still fever on the second day after the injection I repeat it, increasing the dosage according to the condition of the patient and his response to the first dose.

The following case serves to illustrate what can be done with bacterins when the right suspension is used and the frequency and dosage are made to correspond to the patient's condition:

A young man, 17 years of age, was first seen on Oct. 13, 1922. He had been taken suddenly with a chill the day before and his temperature that morning was 105°F. He was extremely delirious. Examination of the chest revealed dulness on both sides between the scapulae and at the angle of each scapula and extending forward to the axilla on the left and to the nipple line, on the right. There were numerous rales over these areas. The pulse was 120. A diagnosis of lobar pneumonia of the right lower lobe and possibly the left lower lobe was

made. He was a strong, robust farmer-boy and I gave him 10 minims of a mixed influenza vaccine containing 1,200 million organisms per cc.

The next day his condition was no better; his temperature ranged between 103° and 104.5°F., and boisterous delirium was present. There was no improvement the third day and I felt that the prognosis was very grave. I suggested a consultation, as I wanted to administer another vaccine inoculation but was afraid of criticism in the event of a fatal outcome.

My consultant agreed with me that this was the only means by which the infection would be brought under control. Accordingly, we gave 12 minims of vaccine that night. The next day the temperature did not go above 103.5°F. This was somewhat encouraging. I gave another subcutaneous inoculation and three days later the fever had terminated by crisis. The second Sunday following this he was out playing ball and fully recovered.

My consultant, a man with a life-time experience in treating pneumonia, had expressed the opinion to friends of the family that the patient would not recover. No less remarkable than the ultimate recovery of this patient was the fact that, in spite of the severity of the symptoms, the temperature dropped abruptly and the convalescence was rapid, with no complications or sequelae.

In conclusion, I wish to point out that my purpose in this paper has been to call attention to some of the differences that exist, in the pathology and the pathogenesis, between the early and the advanced stages of the disease and the clinical findings on which these conceptions rest. The practical importance of such distinctions lies in determining under what conditions we may safely expect to shorten the course of the infection and in emphasizing the necessity for early treatment with mixed vaccines and the counterirritation and eliminative measures which I have described.

It has been said that pneumonia is too often over-treated. In regard to massive doses of alkalies; heroic antipyretic measures when the temperature is not over 104°F. and the circulation is good; the disturbing of the patient during restful sleep for medication, sponges, or enemas, I can readily concur in this position. I have an idea also that the chilling of the skin by sponges, by having patient between sheets instead of blankets, and by using a flimsy garment has a depressing effect on the vasomotor mechanism. A good authority has said that the skin should be kept warm in these cases and that is the impression that has come to me from my experience with them.

# The Standardization of Arsphenamines

By GEORGE W. RAIZISS, Ph.D., Philadelphia

THE clinical results obtained with arsphenamine and its derivatives for the past fifteen years have definitely established the fact that these products are the most remarkable synthetic compounds introduced into medicine. Mercury, which for several centuries had been employed in the treatment of syphilis, now occupies a position of secondary importance. Arsphenamine produces an astoundingly rapid disappearance of syphilitic manifestations and has a most powerful effect upon the Wassermann reaction.

Truly remarkable is the therapeutic efficiency of arsphenamine and neoarsphenamine in experimental trypanosomiasis. In rats whose blood contains millions of trypanosomes, one intravenous injection of a small amount of either of the above products produces a complete disappearance of the parasites a few hours after injection. The dose employed is very much below the maximum tolerated dose. In the treatment of syphilis the margin of safety with these drugs is also very large.

Arsphenamine and its derivatives, particularly neoarsphenamine and to some extent sulpharsphenamine, are at present considered the most important remedies in the treatment of syphilis and other infections caused by the invasion of various types of spirochetes, and trypanosomes. Millions of patients throughout the world are treated annually with intravenous or intramuscular administrations of these remedies.

## Chemistry and Reactions

Arsphenamine, and the whole group derived from it, belongs to the trivalent series of organic arsenical compounds. The element arsenic in this group appears in its lowest stage of oxidation; that is why these compounds are easily oxidizable. The arseno group  $\text{As} = \text{As}$  has a tendency to combine with the atmospheric oxygen, forming compounds belonging to the arsenoxide series, which are more toxic than the parent compounds. The exact chemical changes resulting from oxidation are not definitely known because it is difficult to isolate the intermediate compounds.

It is possible that the reactions which sometimes follow the administration of the arsphenamines are due to the chemical changes taking place in these products. Patients sometimes react to arsenobenzenes in an alarming way. It is sufficient to recall hastily such severe reactions as the nitritoid crisis with its flushing of the face,

swelling of lips, tongue and eyelids, dilation of pupils, nausea, precordial distress and rapid acceleration and fall of the pulse; the Herxheimer reaction with its florid efflorescence of local syphilitic symptoms; the cutaneous reactions—urticarial, macular, papular, scarlatiniform and exfoliative; and most dangerous of all, hemorrhagic encephalitis, to gain an idea of the violent disturbances sometimes caused by these arsenicals. Reactions are to be explained partly by the changes in the chemical constitution of these trivalent compounds. In view of the possibility of reactions, and the great importance and extensive use of the arsphenamines in the treatment of the disease, it becomes apparent how painstakingly and with what fine technic these drugs must be prepared.

The arsphenamine molecule is of a complicated chemical nature. It is a compound which cannot be repeatedly crystallized or purified by other means and is apt to contain impurities. It is possible, therefore, that the cause of the reactions following intravenous injections of arsphenamine lies in the impurities of the drug. Raiziss and Proskouriakoff compared the chemical composition of lots which proved particularly toxic for experimental animals and patients with the composition of those that were well tolerated. An attempt was made to establish a relationship between the purity of the compound and its toxicity. Their investigation led them to the following conclusions:

1.—The quantitative determination of arsenic alone is insufficient to estimate the purity of arsphenamine.

2.—It is suggested that a ratio be established between the amount of arsenic and nitrogen found by analysis.

3.—The degree of reduction in arsphenamine is best judged by estimating the ratio between the arsenic content and the amount of oxygen absorbed.

4.—The analytical study of arsphenamine tends to show that the impurity causing reactions in patients is present only in very small quantities.

Ehrlich was the first to mention neoarsphenamine, in 1912, and he described it merely as a condensation product of salvarsan with sodium formaldehyde sulfoxylate. No analytical data were furnished either by Ehrlich or his collaborators, leaving the chemical constitution of the product a matter of surmise. Bertheim,<sup>1</sup> in his monograph

on organic arsenic compounds, speaks of two possible formulæ for neoarsphenamine: one in which arsphenamine is combined with 1 molecule of sodium formaldehyde sulfoxylate and the other with 2 molecules. Either one, he thinks, can be produced, depending on the conditions of the experiment. But he fails to specify the conditions. These chemical formulæ are also given in the patents on neosalvarsan without analytical data to support them.

Raiziss and Falkov<sup>3</sup> undertook to determine whether sodium formaldehyde sulfoxylate is attached to one or both amino groups of the arsphenamine molecule. As a result of their investigation methods were devised for the quantitative study of the distribution of sulfur in neoarsphenamine. They found the low arsenic content to be due to the presence of non-arsenical compounds such as uncombined sodium formaldehyde sulfoxylate, sodium sulfate, and sodium chloride. They also found other facts which throw light on the chemical constitution of neoarsphenamine.

#### Standards and Tests

Reactions in patients have been properly ascribed to various factors, but there is much evidence that the quality of the drug is of considerable significance in reducing these disturbing manifestations to a minimum. The problem of diminishing the toxicity while retaining or increasing the curative power of these two arsenicals has been of foremost importance both to chemists engaged in chemotherapeutic research and to the leading health authorities. That this problem is gradually being solved in this country is evidenced by the fact that American arsphenamine and neoarsphenamine are superior to those manufactured elsewhere. According to the U. S. government requirements, the tolerated dose of arsphenamine in experimental animals should be 120 mgs. per kilogram of body weight; while that of neoarsphenamine should be 240 mg. per kilogram. Some of the American manufacturers, however, have been able to obtain products which are borne in larger doses, some samples of arsphenamine passing at 180 mg. and some of neoarsphenamine at 400 mg. per kilo. The margin of safety thus created is very large; on the basis of the animal experiments a man of average weight should be able to tolerate a single dose of 24 G. of neoarsphenamine. The dose actually employed in practice is only 0.9 G. As a result of these improvements, fatalities due to arsphenamine and neoarsphena-

mine have greatly decreased. In addition, the therapeutic or curative powers of the American-made drug are high.

To determine the chemotherapeutic value of a substance, its biological, clinical and chemical properties must be studied in order to establish a relationship between them and the chemical constitution of the compound. The biological studies consist of determining the toxicity and therapeutic value in experimental animals. Toxicity is established by introducing the drug orally, subcutaneously, intramuscularly or intravenously and noting the resulting metabolic disturbances or organic injuries. A shorter and more accurate method is determining the minimum lethal dose and the maximum tolerated dose.

In testing the toxicity of drugs by intravenous administration results may be influenced by various factors, such as the degree of concentration of the solution, rate of injection, etc. For comparative tests the technic must be uniform and the best method is that standardized by the Hygienic Laboratory at Washington, D. C., which consists of injecting the drug into healthy, non-pregnant, white rats weighing between 100 and 150 G., in doses proportionate to the body weight. Weights are taken and injections made after about 18 hours' fasting in order to render the dosage more accurate. Injection is made by the gravity method, employing a special apparatus which permits of injecting a given amount of solution very accurately and at a given rate of flow. The speed set down by the Hygienic Laboratory is 0.5 cc. per 60 seconds. The apparatus is recommended for intravenous injections in rats, guinea pigs and rabbits. Subcutaneous and intramuscular injections are often very irritating to the skin and muscles so that the results are seldom so sharp and clear cut as those following intravenous injections.

In conducting therapeutic tests, the selection of the infectious microorganism is of the utmost importance. Upon it depends, in large measure, the length of the experiment, the accuracy of the comparative evaluation of the remedy and the proper interpretation of experimental findings in relation to the treatment of human infection.

The *Treponema pallidum*, the spirochete of human syphilis, is not well adapted for animal experiments because the disease produced takes a mild form and is chronic in character, necessitating observations for about six to eight months. This causes

great delay and renders the experiments very expensive on account of the housing and feeding of numerous animals. Despite these disadvantages, however, the chemotherapeutic investigation of so-called "rabbit syphilis" is beginning to be employed extensively. The work of Ehrlich, Hata, Kolle, Nichols, Brown and Pearce has thrown so much light on the course of the *Treponema pallidum* infection in rabbits that it is now possible to determine the curative dose with a fair degree of accuracy, or at least draw a definite comparison between the activities of various drugs. In some of the pharmaceutical laboratories arsphenamine and neo-arsphenamine are frequently tested by this method as a control upon the results obtained in the routine therapeutic tests with other parasites more readily adapted for daily use.

#### Tests on Animals

For the syphilitic test rabbits are usually inoculated in both testicles with an emulsion containing spirochetes. These are allowed to multiply for about two weeks, when the testicles become considerably enlarged and indurated with a marked infiltration at the points of inoculation. The drug is then injected intravenously or intramuscularly. If it reacts favorably the regression of lesions proceeds rapidly, resulting in complete resolution at the end of seven to fourteen days. If the dose is too small or the compound not very efficient residual lesions may be seen. With a sufficient amount of a proper drug there is no reinfection for many months and the animal is pronounced cured if at the expiration of six months no spirochetes can be found in the testicles.

Ehrlich and his co-workers used various strains of trypanosomes as test parasites for determining the therapeutic activity of organic arsenicals and obtained highly satisfactory results. They found that the destructive action of the arsenicals varies with different types of trypanosomes. Schamberg, Kolmer and Raiziss<sup>2</sup> suggested *Trypanosoma equiperdum* for routine testing of organic arsenical compounds, particularly those of the arsphenamine group. The assumption that there is a close relationship between results obtained with *T. equiperdum* in experimental animals and those observed clinically with *T. pallidum* has been confirmed by Schamberg, Kolmer and Raiziss and also by Voegtlin and Miller,<sup>3</sup> who found that compounds possessing a high or low efficiency in one of the above infections behaved similarly in the other. The value of

trypanocidal tests, however, is sharply limited, inasmuch as other medicinals valuable in syphilis, e.g. mercurials and bismuth compounds, are unable to influence the course of experimental trypanosomiasis.

As stated by Pearce and Brown,<sup>5</sup> the treatment of experimental trypanosomiasis in mice and rats is largely a matter of the speed of action, yielding valuable data regarding the therapeutic activity of a compound in a relatively short time. But experiments of this character do not involve treatment of chronic tissue changes, as in trypanosomiasis of guinea pigs and rabbits, which are more nearly analogous to the naturally acquired forms of the disease. The two types of infection supplement each other in the chemotherapy of experimental trypanosomiasis.

The *T. equiperdum* appears in the peripheral blood (tail) within 48 to 72 hours after intraperitoneal infection. Within five to seven days enormous numbers of trypanosomes are to be found in the blood, untreated animals usually dying at this stage. Kolmer<sup>6</sup> has shown that the number of trypanosomes used in the infection greatly influences the results, a great number of parasites requiring a much larger dose of the chemical for sterilization. Voegtlin and Miller observed that a well-defined dose of the drug is required to kill a certain number of parasites in the blood of infected rats, i.e., the parasiticidal power of the drug is measured in terms of the number of parasites killed.

The technic of the test consists of inoculating a series of healthy, non-pregnant albino rats weighing from 100 to 150 gm., with citrated blood from a seed rat, the blood of which shows about 200,000 trypanosomes per cubic millimeter. Within 24 hours an infection is produced of about 100,000 parasites per cubic millimeter of blood and if left untreated the animals will die in about two days. This method, it seems, is about to be adopted by the U. S. Public Health Service as a control test for the trypanocidal efficiency of various lots of arsphenamine and neoarsphenamine.

#### Chemotherapeutic Index

Recently, a new term, chemotherapeutic index, has been adopted in the field of chemotherapy. It is the value obtained by dividing the maximum tolerated dose (M. T. D.) by the minimum curative dose (M. C. D.), and is expressed by the equation:

$$\text{chemotherapeutic index} = \frac{\text{M. T. D.}}{\text{M. C. D.}}$$

By comparing the figures thus obtained for different compounds under the same experimental conditions there is a ready means of noting the comparative efficiencies of various drugs. Thus if the chemotherapeutic index of substance, X, is 40 and that of another compound, Y, is 50, then the latter is  $1\frac{1}{4}$  times more efficient with the particular infection employed.

In addition to arsphenamine and neoarsphenamine the therapy of syphilis has lately been amplified by the addition of numerous new remedies. Sulpharsphenamine, a derivative of arsphenamine, has attracted considerable attention and is now under consideration as a remedy for intramuscular injections and as an added weapon for the treatment of neurosyphilis. Tryparsamide, too, has aroused much interest in this country. It is of very low toxicity and can be administered to adults intravenously in doses of 3 to 5 Gms. It is also said to exert beneficial results in neurosyphilis. The armamentarium of the syphilologist has further been enriched by various organic compounds of bismuth and mercury. All these chemicals are being carefully investigated and tested, not only by the methods described above but by still newer methods which are considered more adequate. One such method is that of reinoculation. Kuznetsky, Neisser<sup>1</sup> and others used it to determine the cure of syphilis in animals. It was based on the belief that patients or animals infected with syphilis cannot be reinfected until entirely freed from the first infection. When reinoculation was successful the animal was considered cured; if unsuccessful the animal was looked upon as still harboring spirochetes. This method of determining curability in experimental rabbit syphilis was found unreliable by Uhlenhuth and Mulzer.<sup>2</sup>

#### Lymph Node Infections

Neisser verified his reinoculation method by inoculating normal animals with emulsions of internal organs of syphilitic animals. If living spirochetes were present in the emulsion, infection would develop in the normal animal. This method has been utilized by Pearce and Brown.<sup>3</sup> It is based on the observation that the spirochete of syphilis has a predilection for the lymphoid tissues. Lymph node transfer has thus become a valuable criterion for determining the presence or absence of infection when spirochetes cannot be observed microscopically and lesions are completely healed. It is an

important step in deciding whether a given chemical compound is merely capable of extinguishing the visible signs of the disease or powerful enough to eradicate the infection completely. We now know that many remedies can only do the first and very few the second. By the use of the reinoculation test in experimental rabbit syphilis, Kolle<sup>4</sup> found that an infection 45 days old can seldom be cured even if very large doses of arsphenamine are given—doses much higher than those safely used in the treatment of patients. He also found that infections of short duration are occasionally refractory to massive doses (% of M. T. D.) of arsphenamine. His findings, however, are questionable in the light of the new criterion of cure, the lymph node transfer. Chesney<sup>5</sup> et al. found that a few moderate doses of arsphenamine were sufficient to eliminate an old syphilitic infection in rabbits, even if it was 127 days old. It is hoped that this important question of the curability of experimental rabbit syphilis will receive further study and that more definite criteria will be established.

From the foregoing it is evident that the standardization of the arsphenamines, both from the standpoint of production of a standard remedy and from the standpoint of setting standards and carrying out the necessary experimental work in their actual application, is very difficult and complicated. The production, standardization, and application of arsphenamines, if done thoroughly and in accordance with the most modern requirements, are still problems of research.

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# The Relation of Thyroid Deficiency to Other Conditions

By JAMES H. HUTTON, M.D., Chicago

IT is customary in discussing endocrine disturbances to speak of them as if they were disease entities and of themselves caused all of the patients' disabilities. This is many times true, but not always. Any one doing a large amount of endocrine work must be struck by the frequency with which endocrine disturbances occur as complications or sequelae to other and more common syndromes.

It is for the purpose of calling attention to this fact that the following cases are presented:

## Case Reports

**Case 1.**—Mrs. L., age 50; chief complaint, arthritis involving the distal joints of all the fingers. The knees were also slightly involved. The condition had been present in the fingers for five years, but the knees had only recently shown any changes.

Her general health was good and she had been told by her doctor that nothing could be done for the arthritis. There had been no change in her weight in recent years.

**Habits:** Her appetite was very good, but she had recently cut down her food intake, especially the sugars and starches. Her bowels were regular, but for twenty years she had to use cathartics. She drinks very little tea and coffee and no alcohol or cocoa.

**Past History:** Migraine, beginning at the age of 12 or 13, having no relation to the menstrual periods. It occurs much less frequently now and is less severe, coming on about three times a year. Bell's palsy at the age of 34. She feels that she has always had a tendency to rheumatism. Tonsils were removed two years ago. She has had a good deal of inflammation in her mouth, with many aphthous patches on the tongue and palate.

**Family History:** She was married late in life and has never been pregnant. None of her relatives are subject to arthritis.

**Menstrual History:** The first period occurred at 14, followed by an amenorrheic period of six months. The periods then became regular, occurring every twenty-eight days and lasting four or five days without pain. They stopped about six months before she came under observation. This cessation was not accompanied by any circulatory or nervous phenomena.

**Examination:** Temperature 98°F.; pulse 88; blood pressure 140/80. The distal joints of all the fingers were swollen. Some of them were painful to touch and appeared to have become inflamed recently (as indeed they had), while others appeared to have been in their present condition for a long time. The nails were ridged and brittle. There was some creaking in the knees, especially in the right.

The skin was not especially dry nor did the hair seem dry and brittle. The pubic and axillary hair was rather scant, but the outer third of the eyebrows was not thin. There were no palpable glands and the thyroid was very small. The tongue was coated; the teeth appeared in good condition, and the x-ray confirmed this appearance. The nose was normal. The pupils reacted to light and accommodation and the fundi were negative. The reflexes were very active; the Romberg sign was negative, but coordination was poor. There was a slight deposit of fat about the ankles, but there was no padding on the dorsum of the feet or hands, about the wrists nor in the supraventricular areas.

The heart was of normal size and in normal position and gave a very good response to exercise. No murmurs or adventitious sounds were heard. The lungs were clear, the abdomen was negative in that the liver, spleen, and kidneys could not be palpated and no masses could be felt.

**Laboratory Reports:** Urinalysis showed no sugar; a faint trace of albumin; occasional finely-granular casts; numerous pus cells. Stool showed no parasites or ova.

### Blood chemistry showed:

Sugar	105 mgm. per 100 cc. blood
Uric acid	4 mgm. per 100 cc. blood
Urea	17 mgm. per 100 cc. blood

### Blood count showed:

Hemoglobin	70%
R. B. C.	4,700,000
W. B. C.	5,100

### Differential white count:

Poly. neutrophiles	53
Poly. eosinophiles	6
Lymphocytes	30
Large mononuclears	11

The basal metabolic rate was minus 22 percent.

The only significant thing about the blood count was the eosinophilia. This condition is quite frequently encountered in myxedema.

**Treatment:** She was given thyroid,  $\frac{1}{2}$  grain, three times a day, with some salicylates to control the pain. The diet was made quite low in carbohydrates. After a short time hot flashes developed and ovarian residue, grains V, t.i.d., was added to the thyroid. The salicylates were then stopped. By the last of January there was definite improvement in the arthritic condition, which has continued satisfactorily to the present time. (She came under observation December 15.)

The blood count on March 18 showed only 3 percent eosinophiles and the basal metabolic rate on that date was exactly normal.

In this case the presence of a chronic arthritic condition with the absence of a focus of infection was probably sufficient to discourage the doctor from a further search for the cause of her trouble. The

claim is not made that her hypothyroidism was the cause of her arthritis nor that thyroid medication brought about her improvement. The facts are merely related and the reader is left to make his own deductions. Such coincidences as this case illustrates are not uncommon.

*Case 2.—Mrs. E. H.; age 70; first seen June 16, 1925.* Her complaints, as given partially by the patient and supplemented by her sister, were about as follows:

1.—Precordial distress and a fear of angina pectoris. Her entire attention was centered on her heart.

2.—Weakness, so extreme that she could hardly stand and could not walk without assistance.

3.—Partially disoriented as to time: That is, she was sometimes uncertain as to the time of day, day of the week, etc.

4.—Loss of memory for recent events.

5.—Difficulty in talking. Her speech was quite thick and at times slurring in character.

*Habits:* Her appetite was fair, she slept well, and her bowels were regular.

*Past History:* For several years she had been unduly tired and easily fatigued. She gained considerable weight during this period, although she had lost most of this gain during the present illness, her present weight being 131 pounds.

In May, 1923, she suffered a severe carbon monoxide poisoning. Following this she was ill for many months and was unable to walk for some weeks. However, she finally made a very good recovery and was in her usual health until the following summer. September 3, 1924, she consulted her family physician. An abstract of his history states:

"I had a blood count made which showed a marked secondary anemia, the reds being 2,904,000; hemoglobin 60 percent; color index 1.0; a slight poikilocytosis; microcytes few; macrocytes few; mononuclears 13 percent. Urine was negative.

"I gave her iron and red bone marrow at the time and by September 26 her hemoglobin was increased to 80 percent (Dare).

"On October 22, 1924, another blood count was made showing reds 4,664,000; whites 6,700; hemoglobin 70 percent. By January 19, 1925, the blood count showed the blood in a fairly normal condition—reds 4,508,000; whites 6,400; hemoglobin 88 percent. There was evidence of a multiple neuritis. She tired easily and had some vague pains in the legs, but all of this cleared up by December, 1924, when she was taken with a severe attack of influenza. From that time on the leg pains and tired feeling increased. Some incoordination in walking and loss of knee jerks developed. This continued, on and off, until March 15, 1925, when she had a rather marked attack of angina pectoris. The blood pressure at that time was systolic 190; diastolic 60; pulse pressure of 130. The pulse rate was 138.

"She had several of these attacks which responded very nicely to the nitrites, but the leg pains increased, the knee jerks be-

came completely obliterated, and I insisted upon her becoming an absolute bed case.

"On March 17 she had an attack of syncope and the blood pressure dropped to 120, systolic. The radial pulse ran up to 160, and the patient gave a picture of cardiac decompensation. She rallied from this, however, and had several other precordial attacks of pain, and, I had her removed to a private sanitarium where she did very well up until May 20, when the first signs of Korsakoff's psychosis presented themselves. This was fairly typical and was evident on and off until the time she left San Diego for Chicago.

"There has been no loss of bladder reflexes at any time, although she did have considerable trouble with constipation; but after entering the sanitarium this condition soon regulated itself so she had daily bowel movements without any aid."

When I saw her the examination was as follows: Temperature 97°F.; pulse 58; blood pressure 140/90. The skin was pale, but not especially dry. A slight malar flush was present. Most of the teeth were false. The nails were striated, but not especially dry nor brittle. The hair suit was very scant and the outer half of the eyebrows was entirely missing. The pupils reacted to light and accommodation and the fundi were negative. The reflexes were somewhat sluggish, but otherwise normal. Coordination was fair and the Romberg sign was positive, perhaps largely because of the weakness. The heart was of normal size, no murmurs nor adventitious sounds could be heard. Its response to muscular exertion was not tested. The lungs were clear. The abdomen revealed no masses, no areas of tenderness, and neither the liver, spleen, nor kidneys were palpable. Vaginal examination was negative.

Dr. George W. Hall, who saw her in consultation, decided that no abnormality of the nervous system existed except such disturbances as might be secondary to her general condition.

*Laboratory Findings:* The uranalysis showed no sugar; no albumin; few hyaline casts; numerous epithelial cells. The blood Wassermann test was negative.

#### Blood count showed:

Hemoglobin .....	70 percent
R. B. C.....	3,580,000
W. B. C.....	5,300

#### Blood chemistry:

Sugar .....	114 mgm. per 100 cc. blood
Non Protein .....	
Nitrogen .....	24.57 mgm. per 100 cc. blood
Calcium .....	12.2 "
Uric acid .....	3.15 " " "
Creatinin .....	1.65 " " "

The basal metabolic rate of minus 33 percent verified the diagnosis of *atypical myxedema*.

*Treatment:* She was put on desiccated thyroid, 4 grains three times a day. Soon after this she left the city and was not directly under medical supervision, although it was understood that she would be closely watched when she left.

Within a few weeks her weakness increased and her mental faculties declined to the point where she failed to recognize members of her immediate family. These symptoms cleared up when the dose of thyroid was cut down. She improved considerably after that and on her return to the city, in September, was markedly improved. She was, however, very nervous and her pulse rate was 100. Her basal metabolic rate was found to be plus 40 percent. Thyroid was entirely stopped until the rate dropped to minus 10 percent. She was then given 10 mgm. of thyroxin, intravenously. Her response to this was no better than to thyroid so that she was placed on that a little later. Eventually it was determined that one grain of thyroid, t.i.d., would maintain her basal metabolic rate near normal and she is kept on that dosage.

This woman presented many of the signs and symptoms of myxedema. However, the symptoms of angina pectoris and multiple neuritis so overshadowed all others that no attention was paid to the thyroid deficiency.

Her improvement was rapid so that by December 1, 1925, she could indulge in the activities of the average woman of her age.

In this instance the thyroid was primarily at fault, but its symptoms were eclipsed by those of the two major syndromes.

*Case 3.—Mr. L. J. M.; age 30; reported for examination March 20, 1926. His complaints were:*

1.—Attacks of weakness since November, 1924. These come on after mental or physical exertion and are peculiar, poorly-described sensations.

2.—Pains, especially in the left leg and heel. These began in January, 1926.

3.—Pain and aching in the back following exertion.

*Habits:* Appetite is good; bowels regular; sleeps well; no sweats; no nocturia. Gained about twenty pounds in weight during the past year.

*Past History:* About November 1, 1921, he had a cold which was so persistent that a diagnosis of pulmonary tuberculosis was made. The pleura was punctured, but no fluid was found. In July, 1922, he had a gastrointestinal upset; vomited and became jaundiced. He had a number of recurrent attacks of pain after that, occurring every four to six weeks, especially during the cold weather. He occasionally has some gastrointestinal upsets now. He had a pulmonary hemorrhage March 1, 1925, and was in a sanitarium for some months following that. Had rheumatism before the age of 18, also pneumonia, mumps and measles. Tonsillectomy and a nasal operation were done in 1923.

*Developmental History:* He was a small baby and weighed less than one hundred pounds when he was 15 years old. At that time his height was 5 feet 1 inch. During his seventeenth year there was a rapid gain in height and weight. At 18 he weighed 175 pounds and was correspondingly strong.

*Family History:* Two sisters and four brothers living and well. His mother is rather short. His father is of average height.

*Examination:* Temperature 98.4° F.; pulse 82; blood pressure 130/80; height 5 feet 11½ inches; weight 177 pounds. The skin was moist, soft, and delicate. The body hair suit was moderate. There was a rather heavy pubic and axillary hair suit. The hair line on his head was rather high and receded considerably on both sides. The nails were brittle, teeth regular and apparently in good shape, some tonsillar stumps remained. The nose had been broken, but the septum was intact. There were no palpable glands.

*Chest:* No rales could be heard in either lung and no signs of active tuberculosis were present. The heart was of normal size and gave a poor response to exercise. No irregularity and no murmurs were heard.

The abdomen was negative. No masses and no tender areas could be felt.

*Rectal examination* negative. *External genitalia* negative. Sexual function said to be declining.

*Neurological:* Sensation normal. *Knee and ankle jerks* could not be elicited. Reflexes in the arms were very sluggish. The pupils reacted to light and to accommodation. They alternately dilate and contract when exposed continuously to light. Gait, station, and coordination are normal.

*Endocrine System:* Some pituitary pads on the sides of the thorax. The hands were very large, requiring a size 9½ glove. The fingers were rather blunt and resemble those found in acromegaly. Sargent's white line could not be elicited. The thyroid was not palpable. There was no tremor of the hands nor tongue.

March 21, 1926, after leaving the office, he had a severe headache which was general over the head, followed by profound weakness and later by pain in the right leg and thigh: a feeling as if the leg were cut open along the line of the femoral artery.

*Laboratory Findings:* Basal metabolic rate was minus 22 percent. The uranalysis showed no sugar; no albumin; no casts; occasional pus cell.

The blood chemistry was as follows:

Sugar .....	83 mgm. per 100 cc. blood
Calcium .....	9.2 " " "
Uric acid .....	2.6 " " "
Urea .....	13 " " "

*Diagnosis:* The man has had tuberculosis. It seems quite certain that this is now arrested. He undoubtedly has an infected gall bladder, either with or without stones, which probably makes some trouble at the present time. He has a severe degree of hypothyroidism, approaching an atypical myxedema. He has also a hypopituitarism involving the anterior lobe, post-adolescent as to time. Undoubtedly, over-activity of the anterior lobe of his pituitary was largely responsible for his rapid gain in height and weight during the seventeenth year. His hands also show the effects of this activity. This condition was followed in a few years by a decrease in activity, giving rise to the attacks

of weakness and nervousness of which he now complains.

*Treatment:* He was put on thyroid, two grains, three times a day, and pituitary, anterior lobe, five grains, t.i.d. Antuitrin, one ampule, twice a week.

He has been carefully watched for signs of thyroid intoxication. Already the pains in the legs have disappeared. These were thought to be due to beginning tabes, this belief being based on the absence of his knee and ankle jerks. His Wassermann tests have always been negative. (Jelliffe some years ago reported some cases of hypothyroidism where a diagnosis of tabes had been made.)

This man has been under the care of very competent clinicians who have had all the advantages of well-equipped hospitals and tuberculosis sanatoria to aid them in reaching a diagnosis. Apparently no one had suspected an endocrine factor in the case and no determination of the basal metabolic rate had been made. He had comparatively few clinical signs of hypothyroidism and a diagnosis of any considerable degree of thyroid lack could hardly have been made without that determination. This case serves to emphasize the importance of this laboratory procedure in obscure cases.

These cases demonstrate the need for a careful search for all of the patient's troubles or abnormalities and the giving to each of its proper value as to its probable relationship to the patient's subjective complaints. For example, there is no question that Mr. L. had pulmonary tuberculosis and cholecystitis, but his pituitary and thyroid deficiencies were undoubtedly the cause of his most distressing complaints. Had these endocrine conditions been recognized a year or two earlier their treatment could have been undertaken while he was undergoing sanatorium treatment for his tuberculosis.

Mrs. H. undoubtedly had a neuritis with Korsakoff's psychosis and angina pectoris, but back of this, and much more important, was the thyroid insufficiency which was undoubtedly to blame for both conditions.

Too many times we are hampered by the idea that a diagnosis of one disease or syndrome should explain all of a patient's complaints. We are timid about recognizing or suggesting the possible existence of two or more diseases in the same patient at the same time. This was strongly impressed on my mind a number of years ago while attending a course given by Dr. Richard Cabot at the Massachusetts General Hospital. It was conducted about as follows: The clerk read the clinical history, summarized the physical findings and reported in detail the results of any laboratory work that might have been done. The clinical diagnosis was then announced. After that there was a free discussion of the case between Dr. Cabot and the class. Finally the postmortem findings were read. The most significant thing about the whole course was not the number of errors made by the clinicians and discovered by the pathologist, but the fact that while there was a single disease recognized and discussed by the clinician the pathologist usually found a number of diseased conditions.

It is very difficult, at times, to give each finding its proper value as a causative factor in the patient's disability. For example, a man may have "rheumatism" and bad teeth, but it does not necessarily follow that the teeth cause the rheumatism. Incidentally, it may be remarked that the discovery that there is many times a close relationship between diseased teeth and inflamed joints has led to the removal of thousands of sound teeth. When no other focus of infection could be found, the teeth were removed on "suspicion" that they might be the cause of the joint trouble in spite of their healthy appearance.

The endocrine side of a patient's body should be investigated just as regularly as the condition of his gastrointestinal tract. Endocrine disorders are frequently complicating factors or sequellae to other complaints.

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**T**HREE should be technologists in control of every field of human need and desire; but government and social control are now in the hands of expert politicians who have power. instead of expert technologists who have wisdom.

—Albert E. Wiggam.

# Play and Life\*

By EUGENE T. LIES, Chicago, Ill.

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**O**URS is said to be the day of the rediscovery of the child. In many respects this is true.

The child has been the victim of our rapidly developing material civilization. He has been lost sight of in the building of cities and even in the building of homes. Adults have brought him into existence and set him in the midst of an adult environment to do the best he could in it.

Even the schools have been sacrificing the little fellow to curricula, systems, examinations and other extraneous considerations. But, happily, a change is on. More and more we ask, "Is this a good town, not only to work in, but to bring up children in? Is it a safe town, a healthy town, a decent town? Can we all be happy in it?"

Then, wise parents, building a new home, are placing it where there is plenty of open space around it and inside they are fixing up a play room for the youngsters.

The educators, too, are seeing a new light. They are realizing that the schools' activities must all have at their center none other than the child himself. His nature, his needs, are important considerations. His personality-growth is the great desideratum. How must he be handled? What must he be fed to nourish his body, mind and soul? O, what a difference in point of view!

Here, as well as among parents and civic leaders, physiologists, psychologists, social workers and others, we find that life in the big sense—the life more abundant, full, vital, ever-growing, never finished—is the great goal they are thinking of in their moiling and toiling for the welfare of our citizens in the making. Then as one studies these plans and projects, one notes the new emphasis they are all placing upon play as a life giver and a life saver.

## Play Is the Child's Business

Play is basic in life. It is the child's vocation; "the activity which the child's own nature suggests and guides," "the essential part of education, nature's prescribed course," as Joseph Lee suggests. "Without the school the child will not grow up to fit our institutions; without play he will not grow up at all," he declares.

Dr. Thomas A. Storey, physiologist and physical educator, emphasizes the fact that

the child at birth comes along with something like 13,000 million neurons or nerve cells; that each of these must be developed if we are to expect later an altogether normal human being; and that their development will come largely through the chemical action induced by physical action.

Then, this: that the big chance to do a good job along this line comes in the first eighteen years; i.e., in the period of childhood! Finally, he says, truly, that it will not be by the dull calisthenics or formal gymnastics route that we can expect the child to get this necessary development but rather by way of the more appealing, more interesting route; namely, by way of play, with all its rich and varied possibilities. May we not declare then: "*Sans play, sans life!*"

Play promotes muscle-growth, health, strength, agility and blood circulation; it builds resistance to disease; lays the foundation for co-ordination and power of quick adaptation; develops stamina, motor skill and nerve health; strengthens the heart and lungs; and leads to grace and beauty of form. All of this furthers the well-being of the child and fits him in fundamentally necessary ways for adult life. And the wonderful thing about it all is that play answers the deep hungers of the child—the urge of race experiences inexorably demanding expression anew in each new human being.

Play helps to retain in the present generation the worth-while experiences of other generations. It is satisfying. It is creative. The child must have it and have it in forms which will meet the different types of hunger manifested at different age periods, or he grows up stunted. Deny it to him and you may prepare for explosions. Nature will not be cheated. True, in the physical realm, the various forms must always be adapted to the physical condition of the individual.

## Play Develops Mind and Body

But all authorities agree that play also develops the mind. By building well the body of the child it is laying the best foundation for building the mental structure. It reinforces the inherited abilities. Play deprivation means brain retardation. Indeed, Froebel has said that play is the "outward expression of an inner life." We may

\*Given at the Convention of The Arkansas Medical Society, May 18, 1926, Hot Springs, Arkansas.

say that, through activity, the young child actually discovers his mind and through continued and varied physical activity he stimulates that mind into varied activity of its own. He learns to *will* further activity and, in turn, the muscles he is ever developing become the very organs of his will.

He experiences repetitions of sensations and thus enlivens memory and imagination. He leads on to association of ideas from all his pleasurable play experiences and reason emerges. He is on his way to being a man. Indeed, as already suggested, one of the very important functions of play is to practice and rehearse adult activities.

A study, made in 1914 by the U. S. Bureau of Education, of the subject of "Physical Growth and School Progress" proved that physical retardation and mental retardation generally went hand in hand. Other studies have substantiated this conclusion.

Play carried over into the realm of games utilizes the earlier-developed reflex movements as a basis for securing results of another sort, such as throwing at a target, catching, grappling, developing the urge to win in group activities. Here, now, is a call for competitive skill, courage, self-confidence, strategy, planning, quick judgment, learning of rules—all of them mental processes of real worth.

#### Play and Morals

Then, too, at the same time, this playing human being is forming wholesome moral habits and practicing the art of social living. Every playmate is a teacher. The games of youth are an antidote to one-sidedness and narrow-mindedness. They avert unwholesome introspection and consequent morbidity and self-consciousness. They call for self-subordination and, at the same time, cooperation. They develop character and lay the foundation for the higher spiritual life. In and through them can honesty, loyalty, good sportsmanship, breadth, fairness, patience and discipline be most easily inculcated.

The effect of tracts and sermons upon youth is always uncertain and too often nil. The effect of the right kinds of play is certain. I must not fail to stress the point that the superior worth of the character-building values in group games, under regulation, lies in the fact that they accrue in an atmosphere and under conditions of freedom. The boy doesn't need to go into the game at all if he doesn't care to; but when

he cares to he does so of his own free will and then he buckles down to the game's requirements. This is cheerful, self-willed submission—real virtue. And it is fitting to insert here the following quotation from G. Stanley Hall, in his "Youth, Its Education, Regimen and Hygiene": "Few realize how dangerously near physical weakness is to wickedness; how impossible healthful energy of will is without strong muscles which are its organs; or how endurance and self-control, no less than great achievement, depend upon muscle-habits." Wise words!

Are we not justified then in declaring that in constructive, motivated play, if made part and parcel of youth's every-day life, we have one of the most powerful means for catering to the all-around well-being and happiness of the child and for fitting him into this present type of world—into our Democracy? And moreover, by encouraging wholesome play habits in childhood, are we not making it easy for the adult that is to be to continue those habits through life? Are we not making a contribution to that training for the new leisure of which America is in such dire need? The boy is father to the man.

#### Play for Adults

I can only indicate, in passing, that the philosophy of the movement I represent, while stressing the fundamental and vital need of play provision for children and youth in all American communities, nevertheless, does not forget the needs of adults. It is convinced that people do not stop playing so much because they grow old but rather that they *grow old too fast because they stop playing*. I pass on to you for your personal use this prescription for growing old gracefully: "Keep Limber, Loving and a Little Bit Loony." It's worth trying.

The insurance companies are running page advertisements in the magazines telling us 45ers and older to do just about this thing. Why? Why, of course, to prolong our lives—and, incidentally, to defer paying out money to the beneficiaries of our policies. Business and philanthropy in happy mixture!

Doctors of America, *every* State needs a law giving your towns and cities full authority to conduct recreation systems and spend money therefor! At present 11 or 12 have such a law. The Playground and Recreation Association of America stands ready to help you and other leaders to se-

(Concluded on Page 668)

# Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

[Note: The Seminar is devoted entirely to the practical interests of surgeons. Problems and their discussions are solicited. Contributors must give their names but whenever desired these will not be published. Questions for this department should not exceed fifty words. Address all communications for the Seminar to Dr. G. M. Blech, 108 North State Street, Chicago.]

## Surgical Diagnostics—Continued

The trained eye will detect the presence of pigments which are due to extravasation of blood—green, brown, yellowish. An observing surgeon will recognize, almost at a glance, when he has to deal with a simple effusion of blood and when there is also involvement of the tissue surrounding the blood, resulting in a *hematoma*, and what is of some importance is the circumstance that the time of appearance of a hematoma with relation to the traumatic occurrence affords a means of estimating the degree of injury responsible for the resulting condition.

In a number of surgical lesions pigmentation and circulatory disturbances coexist. In such cases it is essential to observe the effect of pressure, not immediately after the pressure has been removed, but *during* the compression. As the pressing finger obstructs the view, we resort to a simple stratagem practiced by dermatologists—we employ any suitable piece of glass, say a microscopic slide, for the compression. Let us assume, for purpose of illustration, that we have to examine a lesion suspected to be lupus. The compressing slide will plainly show the disappearance of the hyperemia and all the more clearly and pronouncedly expose to view the tuberculous lesion.

The *translucence of liquids* is utilized to differentiate suspected solid growths where this maneuver can be carried out. This is particularly applicable to the scrotum when one is not sure whether a tumor has solid or liquid contents. An incandescent light held against the scrotum, and the tissues viewed from the opposite side, will very often prove a valuable diagnostic aid, especially when one suspects a malignant disease; e.g., sarcoma of the testis. A darkened room or a tube of paper held against the scrotum opposite to the side placed towards the light and used like a telescope will facilitate interpretation. Let it not be understood that translucence or its absence

represents conclusive evidence as regards the absence or presence of solid growths, but when taken in connection with other means of identification the simple maneuver just described has decided diagnostic value.

Something was said in the preceding issue about the need of studying changes in form. The importance of this may not become evident when a surgeon confronts what may be called self-diagnosing changes in form or shape. A novice seeing for the first time a case of elephantiasis of one or both legs may not be able to give the Latin name of the disease or explain the existing pathology, but the impression is one never to be forgotten, simply because it has been an overwhelming one, leaving a vivid memory of the essential characteristics. One does not have to be a genius to recognize a deformity of the spine or a hydrops of a knee, but often enough in every-day practice one encounters changes in form which call for anatomic reasoning to insure a rational therapy.

Let us take for purpose of illustration a poor washwoman. Again and again she has run splinters of wood into one or another finger; again and again she has removed them and gone on with her work unconcerned about herself. But the last time this happened she developed, in the next few days, a felon of the affected finger, and the inflammatory process extended over the hand and forearm. The diffuse swelling, easily recognized as such, is more pronounced on the back of the hand. Here the pressing finger leaves a more or less lasting impression, as when one presses into dough; yet the pus is on the opposite side, in the hollow of the palm. Why? There is but one anatomic explanation, and we may as well make this something of a surgical exercise and let each reader who so desires give his impression, after reviewing the anatomy of the hand, if need be.

Diagnostically, swelling due to infection presents hardly any difficulties, but when it comes to inflammations of joints the character of the configuration plays a diagnostic part, and here a study of the contours of the affected joint may prove as helpful as the clinical history. One need only think of the difference between an acute gonococcal arthritis of an elbow as compared with a

tuberculous inflammation of the same joint to appreciate the diagnostic value of certain changes in form.

How much sorrow surgeons and general practitioners would escape if they took time and pains enough to study form changes, especially in injuries of the extremities, only the annals of the courts can tell. Last winter we saw a striking example of what was a plain case of carelessness. A physician was called in to see an elderly woman who had slipped on an icy pavement and when she got up, with the help of passers-by who carried her into her apartment, she suffered excruciating pain in the neighborhood of the right knee, and certainly could not walk. The physician saw the woman about an hour after she received her injury, looked at the knee, saw no swelling there, rotated and flexed the limb, placed it between two pillows and ordered hot applications to the knee, on the ground that there was a contusion which might develop into a traumatic synovitis.

When we saw the patient the next morning, in consultation, we were astonished to find the right leg much shorter than its neighbor, the position alone indicating a fracture of the hip. The excuse of the attending physician that the room was dimly lighted and that an exact examination could therefore not be made, did not appease any one, and all our wit was needed to save the colleague from disagreeable consequences.

In dislocations the x-rays are dulling our powers of diagnosis with reference to obtaining a mental picture of existing anomalous relation of the affected structures. We have learned so to rely on the radiograph, both as a diagnostic record and as a means of defense of our therapy, that we allow the radiographer to tell us whether a dislocation is anterior, posterior or lateral and, as one wag once put it, whether the top was pushed off from the bottom or vice versa.

Contractures, paralyses, deformities in general, are easily recognized as such by ordinary inspection and certain tests, but when it comes to the estimation of the size of certain abnormalities, even the most penetrating eyes are not free from error and exactness certainly is not to be expected. Here *mensuration* comes into its own and we shall briefly review what we can attain by actually measuring the conditions under discussion. (*To be continued*)

#### Discussion of Surgical Problem No. 6

*Recapitulation.* (See July issue, p. 493.)  
Dr. R. P. Cummings, of Conway, Arkansas,

presents the problem of a colored man, 30 years old, father of three healthy children, who woke up in the night with some tenesmus. Efforts at defecation failed. Saline laxatives had no pronounced effect. On the way to work the following morning, he was attacked by abdominal cramps severe enough to necessitate being placed in bed as an emergency case. Morphine administered by a physician afforded temporary relief. There was some vomiting, but this may have been due to household remedies administered by friends. The first physician diagnosed appendicitis, but another physician called in later diagnosed cholelithiasis. Dr. Cummings, the author of the problem, first saw the patient eleven days after the onset of the first attack. He was then slightly icteric, had a typical facies and was spitting up frothy saliva every few minutes. The abdomen was distended below the umbilicus. Dullness in percussion caused Dr. C. to catheterize the bladder, resulting in the evacuation of eight ounces of urine without affecting the distension or the dullness on percussion of the lower abdomen. Urine negative. Heart and lungs normal. Temperature 99°F.; pulse 90; respiration 20.

The requirement called for the diagnosis of the case as presented.

Discussion by Dr. John Clark,  
Latham, Kans.

As Dr. Cummings had not seen the patient before the eleventh day of his illness, he cannot be expected to furnish us details with regard to pulse, respiration and temperature, especially at the beginning of the case, but these data would be of great interest to us. From the symptoms given, the diagnosis of acute appendicitis suggests itself as plausible. The diagnosis of gallstones has too vague a history to merit support, but the diagnosis of intestinal obstruction looms large as a possible explanation of what went on in the patient's abdomen. Peritonitis and sluggishness of the bowel go hand in hand, increasing as the peritoneal process increases. Certainly at that time no opiate should have been given except as a preliminary to removal to a hospital for the purpose of surgical intervention.

When Dr. Cummings saw the patient and emptied the bladder, leaving uninfluenced the tense, distended abdomen, to my mind we see a picture of abscess. Icterus in a colored patient is often rather hard to define, but the dry skin, the sunken eyes and the pinched expression tell a tale of many days' neglect. Certainly we have unmis-

takable evidence or general peritonitis with abscess and obstruction. I may add that I neither affirm nor deny the presence of gall-stones. We know that gall-stones may exist without producing any symptoms, but if they had any influence on a case such as was presented, the clinical manifestations would have pointed to the gall-bladder as the source of the trouble.

**Discussion by Dr. H. O. Strosnider,  
St. Francisville, Mo.**

Three men will examine a patient with abdominal trouble and all three will come to different diagnostic conclusions. This leads me to ask the question whether there is any surgeon living who can place his fingers on the abdomen and say that his findings are infallible. In the case of Dr. Cummings, we see a difference of opinion by men who had seen the patient personally and, naturally, at a distance and without the factor of a personal examination, the best that can be ventured is a diagnostic guess.

On careful perusal of the clinical history, as presented by Dr. Cummings, I am inclined to the belief that his patient suffered from some form of glandular trouble, the whole picture impressing me as being that of a lymphangitis. As regards the cause, it may be that there was some form of infection or, perhaps, a tumor blocking the lymph vessels.

A condition of this character may run a periodic course. Rupture of a lymph vessel will, of course, cause a flow of lymph. Re-infection with accompanying edema of the involved regions is a further possible consequence.

**Discussion by Dr. E. C. Junger,  
Soldier, Iowa**

This case, while not without diagnostic difficulties, presents a clinical picture typical of acute perforative appendicitis with abscess. The acute onset and the later developments leave us no room for any other decision. As this class of cases has been the subject of a good deal of discussion in the Seminar, I shall abstain from criticising the treatment, especially since the requirement calls for the diagnosis only.

**Discussion by Dr. J. R. Sturte,  
Minneapolis, Minn.**

We have a patient, aged 30, with sudden onset of pain, weight in lower abdomen, desire to defecate, and constipation.

This suggests obstruction of the bowel or torsion of a hollow viscus, and an intussusception or volvulus suggests itself from the

absence of a rise of temperature and increase of the pulse rate. The small bowel movement that occurred after the administration of a laxative is meaningless, as it affected the contents below the supposed obstruction. The classic phenomena of obstruction, as, vomiting, passage of blood and mucus, distention and tympanites, need not always be present. In the absence of a hernia one tries a high colonic flushing, and if this fails to have the desired effect laparotomy is indicated.

The next day, however, the picture changes, intermittent pains—cramps—not being relieved by opiates, and an abdominal mass, low down, being the predominant phenomena.

We may rule out, for reasons already mentioned, appendicitis; there is nothing to justify gall-stones, perforation of the stomach or duodenum by ulceration nor acute pancreatitis. Now we confront a case with an abdominal mass coming on gradually with the symptoms and objective findings as given, spitting of frothy saliva being one symptom requiring our special attention, all of which suggests the presence of a dissecting aneurysm.

**Editorial Comment**

It is regrettable that so interesting a problem as is presented by Dr. Cummings has been allowed by our usual faithful contributors to go undiscussed or to be discussed only in a few words. I received a number of post cards giving merely the diagnosis. Eight contributors suggest acute appendicitis; two, mesenteric thrombosis; two, obstruction by Meckel's diverticulum.

We must realize that we confront a case of apparent "acute belly" on its eleventh day of progress, and that the situation, while vague as regards the beginning, is perfectly clear from Dr. Cummings' description. While we could have certain additional data, such as a blood count, the record of the pulse and temperature for at least two days and so on, in seminaristic exercises the idea is to arrive at a diagnosis under certain limited conditions. I have no additional data than the ones given, except possibly that the author himself diagnosed acute appendicitis, and that operation could not be performed for external reasons.

As regards the beginning of the case it may be almost anything, because the symptomatology of fecal retention, abdominal pain and vomiting is characteristic of a number of surgical affections of the abdomen, but when it comes to the time Dr.

Cummings saw the patient we obtain a reasonably clear picture. Note the almost normal pulse, the normal respiration and the almost normal temperature; yet the patient has the appearance of one suffering from abdominal infection. The description of the abdominal distention is classic, in that the right and left flanks are distended, the ridge midway between the umbilicus and pubes, along the linea alba, being characteristic. This signifies, not appendicitis, not abscess, but *obstruction* low down in the bowel.

What caused this obstruction is hard to tell. It may be an intussusception, but it may equally well be due to some other mechanical condition. I recall a similar case where we all were considerably baffled. I held out against a diagnosis of appendicitis and diagnosed colonic obstruction due to an unknown cause. The man had had no typhoid fever and gave no clue to anything. He admitted a very mild gonococcal urethritis a number of years ago, but nothing else. I at once ordered a Wassermann test made and, to the astonishment of all, obtained a three-plus positive reaction. Another laboratory reported the same result. Operation revealed that my tentative diagnosis of an old syphilitic ulcer causing adhesive obstruction was correct. Operation brought about relief and a prolonged course of treatment has kept the patient in good health, so far.

While we must always anticipate the unexpected, and while only a laparotomy can give us a solution of the problem, I submit the diagnosis of obstruction of the pelvic colon. The icterus is merely an expression of sepsis of intestinal origin. We shall all be very grateful to Dr. Cummings if he will keep us posted as to the outcome of this exceedingly interesting case.

#### Discussion of Surgical Error No. 3

**Recapitulation.** A general surgeon performed a tonsillectomy on a young woman, by dissection and the snare method. The indications for the operation were correct in every respect and there were no contraindications to the operation, nor was there any vascular anomaly.

There was a profuse hemorrhage immediately after the tonsil was removed, which was not permanently controlled by compression. Alarmed at the resulting situation the surgeon ligated the internal carotid artery, without, however, controlling the hemorrhage. The requirements called for the error and the proper procedure in serious hemorrhage.

#### Discussion by Dr. E. C. Junger, Soldier, Iowa

If compression controlled the hemorrhage it should have been applied for several hours. Horse serum or coagulose should have been administered. Clamping and tying the bleeding vessel should have been tried. To tie off the internal carotid for a hemorrhage following a tonsillar operation is a very heroic procedure. My old, faded "Gerrish's Anatomy" says that the tonsillar artery comes off from the facial, which is a branch of the *external carotid*, and, accordingly, it is safer and more purposeful to tie off the *external carotid* if a principal vessel must be ligated as a last resort.

#### Discussion by Dr. H. O. Strosnider, St. Francisville, Mo.

I may be prejudiced, but I am strongly opposed to having general practitioners and even general surgeons do tonsillectomies. In this particular case the surgeon erred in tying the internal carotid, partly because this procedure cannot arrest the hemorrhage and partly because it is certain to produce cerebral disturbances.

The best method immediately to control hemorrhage which is not due to general oozing, after a tonsillectomy, is to search for the bleeding point and compress the tissue containing the bleeding vessel with an ordinary artery forceps, the same as is done in general surgical work. Failure to control hemorrhage by this classic procedure dictates the use of the galvano-cautery, which seals any accessible blood vessel.

As a special precaution an ice bag against the throat and a nurse constantly on the watch until all danger of a hemorrhage is over will prove wise directions.

#### Discussion by Dr. J. R. Sturte, Minneapolis, Minn.

The ligation itself was an error. If it was necessary to ligate after all known measures to control postoperative tonsillar hemorrhage had failed, he should have tied off the *external carotid*.

The internal carotid supplies the dura, optic chiasma, the anterior and medial portion of the brain. It is the *external carotid* which supplies the tonsil and soft palate.

In my opinion the proper procedure in the case was the application of tannic acid and compression. This measure would stop all oozing, leaving the better exposed to view any spurter when the anterior pillar is retracted, facilitating its control by hemostatic pressure or ligation. If these should fail, the entire fossa and pillar can be su-

tured over a gauze pack, to secure tension as well as compression. In view of possible constitutional disturbances some hemostatic serum should be injected and ice pack to the neck and injection of morphine resorted to for their sedative effects. It is needless to add that after severe hemorrhages the classic methods for the treatment of acute anemia, including also transfusion, if need be, must be instituted as soon as the original hemorrhage has been controlled.

#### Editorial Comment

The principal error is due to an old teaching that the internal carotid supplies the blood vessels of the tonsil. The correct anatomic situation is as follows:

There are four arteries piercing the capsule and supplying the tonsil proper. The anterior tonsillar artery comes from the dorsalis linguae; the superior tonsillar comes from the descending palatine; the posterior tonsillar artery comes from the ascending pharyngeal; and the inferior tonsillar artery comes from the external maxillary artery. This anatomic situation requires but further tracing to show the absurdity of the belief that the internal carotid has anything to do with the vascular supply of the tonsil.

In the case under discussion the surgeon, who claims that the ordinary and usual methods of compression, including that by artery forceps, failed to stop the flow of blood, concluded that he had injured the carotid. When one remembers that the external carotid terminates in the parotid, by division into its terminal branches, it would seem that the least that the surgeon could have done was to temporarily compress the external, to test its effect on the hemorrhage.

I am rather inclined to advise general surgeons to refer their nose and throat cases to specialists. The fear that this would prove an economic loss is foolish. I was recently astonished to see a distinguished surgeon refer a young woman to a gynecologist for a simple ovarian cyst. When I asked him about it he told me that the gynecologist is worth ten thousand dollars a year to him, by referring general surgical work, and that he would be a fool to treat gynecologic cases. I am glad to send nose and throat work to good men, principally because they have the technic for fine work developed to a high state and partly because they refer general surgical work to me in turn.

When a surgeon is compelled to be a specialist for "all diseases of the skin and those under it," that is another story, and

even the men in hamlets who must remove tonsils need not worry, so long as they use ordinary precautions. Were I so placed, I would prefer the old-fashioned tonsillotomy. All the points needed for the requirement have been brought out by Dr. Junger, Dr. Strosnider and Dr. Sturre.

#### Problem No. 8

A policeman, about 30 years of age, in excellent health and without any previous history except measles in childhood, with no familial history that can have any bearing on the case, fell forward while making his rounds in the winter of 1920. He recalls that he slipped on an icy sidewalk, thought of his pistol and struck the ground face down. Passers-by picked him up, but as he was unconscious he was taken to the nearest hospital, about a mile away. There a diagnosis of concussion of the brain was made, after the unconscious man had been radiographed for injury to the skull. The radiographs showed absolutely normal conditions.

Consciousness returned within a few hours and, after observation for thirty-six hours, the patient was discharged. He complained to the surgeon that the place where he struck the ground—the forehead, over the left eye—was painful, but as there was no more than an ordinary bruise to be determined, he was given a lotion and told that the pain would disappear in a few days.

The painful spot, however, did not disappear, but has continued to the present time, and he has had his uniform cap so arranged that it does not exert any pressure on the affected spot.

In the spring of 1923 he was attacked by an epileptic seizure, after experiencing an unusual amount or degree of pain at the site of his injury. The epileptic attacks were repeated so often that he had to ask for leave and sought the internal department of the hospital. Here a competent internist, after observing an attack, diagnosed genuine epilepsy. Three months of treatment proved fruitless and you, as a surgeon, are consulted.

Considering the findings as above given, you are to suggest:

First: Is the diagnosis of epilepsy correct, or is this a surgical case?

Second: Is surgical therapy indicated? If so, give the character of the operation proposed.

Third: Assuming that a diagnosis is not possible, explain to the relatives and the attending physician on what ground you propose surgical intervention.

# Clinical Notes and Practical Suggestions

## Are We Specializing Too Much?

### A Plea for the General Practitioner

THIS is preeminently an age of specialists—in commercial life, in the various mechanical trades, both skilled and unskilled labor, also in the liberal professions, Law, Architecture, Engineering, and even in the Church. Is it to be wondered at then that such a wide field as Medicine should be divided into several special departments? The ever-increasing knowledge, which is now being rapidly accumulated over the extensive field of medicine, is possible only when the work is divided among a large number of workers, each in his own particular sphere; and the time when any one man could reasonably claim, or be expected to have, an intimate knowledge of the whole science of medicine is forever past.

But Medicine is more than a science; it is an art to be practiced, of more importance to the human race than perhaps any other human activity. As medical men, we are the seekers after, the custodians and the purveyors of truths, the transcendent importance of which for the physical welfare and happiness of the race makes them secondary only to the eternal truths of religion, as these affect man's immortal soul.

Realizing, then, the immense responsibility which is thrust upon us, and which indeed we willingly assume, let us not forget that to the end we may serve humanity, the practice of our art is of greater importance than the pursuit of our science. Do not misunderstand me. I do not mean that blind empiricism should take the place of practice founded on scientific research; but that, inasmuch as the guardianship of public and individual health devolves on the medical practitioner, his equipment for the service required of him and his ability to make use of it is of more importance than the power of acquiring merely abstract knowledge. I would not for a moment belittle the gifts of the pure scientist or laboratory worker; but, in the fight against disease and in the battle for the betterment

of the human physique, it is the fighter in the front line that wins the victory and without whose intelligent, well-directed efforts no victory is possible.

Such being the case, how important and necessary it is that the practical exponent of medical art should be well equipped in every way for his task! The fight against disease is mainly a hand-to-hand encounter, often far from supports, and calling for an all-round knowledge of the resources and weaknesses of the foe, and for the skill to turn this knowledge to good account.

Now, having emphasized the truth that the medical practitioner should be a man of more than ordinary knowledge and well provided with all the instruments of his art, I would ask you to remember that the human body is not a mere assemblage of component parts—a combination of distinct and independent organs, more or less at war with one another—nor a union of cells and tissues bound together in haphazard fashion. The individual man is a coordinated structure, "and whether one member suffer, all the members suffer with it; or one member be honored, all the members rejoice with it."

The specialist is apt to interpret all abnormal symptoms in terms of his own particular specialty. In a headache, for instance, the neurologist sees some disease of the brain; the ophthalmologist, some error of refraction; the gynecologist, some uterine trouble; the urologist, some pathology in renal function; the cardiologist, something wrong with the heart or circulation. Any one of these may be right, or all may be wrong, and the etiological factor may be an overloaded, sluggish bowel. If the specialist does not find anything abnormal in his particular field, the patient is passed along from one to another until, luckily, someone spots the trouble, or until the patience or pocket of the sufferer is exhausted. A well-informed general practitioner at the begin-

ning would probably have correctly diagnosed the trouble, and prescribed the proper treatment; or, if he felt that it was a case demanding more expert knowledge or better treatment than he could give, he would refer it at once to a specialist capable of handling it properly.

The specialist *may* be, indeed *should* be, a man with a broad general knowledge of medicine; but I fear the tendency of these days is to specialize before this general knowledge has been attained. Young graduates decide that they will take up a specialty at once, and do not fit themselves by engaging for some years in general practice, preferably in the country, but they attend a postgraduate course in the chosen specialty, and thus narrow rather than broaden their medical outlook. The attention of the specialist is concentrated on the supposed disease—the change of structure or abnormal functioning of some organ or tissue, rather than on the whole organism of the patient, physical, mental and psychic.

After all, the main duty of the medical profession is the prevention and cure of disease, and into this duty, as connected with the individual, enter factors from all three activities of a human being. What we need is men broadly and carefully trained in general medicine. I am afraid, however, we have now a too highly specialized division of labor, and what is urgently required is a correlation and coordination of the facts observed in the various branches of the science and art of medicine. This is the function of the general practitioner, and who can say that it is an easy job? It calls for the best men among us, and for the best that is in us.

There is no reason why the general practitioner should occupy any lower status than the specialist, who indeed is sometimes given to an arrogant bearing towards his supposedly inferior brother. Also many people think that they should consult first with the specialist as the all-important man. So they make up their minds what particular part of their body is ailing, and go to the office of the doctor who professes to be an expert in that kind of trouble, only to find that they have made a mistake, and that the proper place to apply was two doors farther on. Here, too, they were met with disappointment, and concluded to go a mile or two farther, trying one specialist after another, till, as a last resort, they consult the old family doctor, who sees at once just what is wrong, and confidently sets about

the treatment; or, if he considers it a case for a specialist, knows and recommends the proper one.

I have brought forward nothing new or startling, but my plea is that all of us should make our knowledge of medicine as broad as possible—not that anyone can ever know it all, but that we should lay a good, solid foundation of general and technical knowledge; study deeply to keep abreast of new facts and discoveries; and work as hard to make ourselves capable family physicians as the specialist works to become proficient in his particular line. When we have accomplished the *specialty of general practice*, we will be in a position to hold our heads perhaps even a little higher than those of more limited claim on the attention of their fellows.

GEORGE ACHESON,  
St. Martins, N. B., Canada.

#### CALCIUM AND PHOSPHORUS

It is established that paucity of calcium may become a "limiting factor" for the use of phosphorus. The converse of this, namely, that a deficiency of phosphorus in food may retard the deposition of calcium phosphate in the bones and thus the storage of both calcium and phosphorus by the body, and that in such case the addition of a phosphate to the diet will induce the increased storage of calcium as well as of phosphorus, has also been demonstrated. These two elements resemble Siamese twins in their mutually advantageous nutrient interrelationships. Fortunately, a diet adequate in calcium is in general likely to be satisfactory with respect to phosphorus. The reverse is by no means equally probable.

—J. A. M. A.

#### ULTRAVIOLET IRRADIATION IN RHUS DERMATITIS

Ivy poisoning presents a most annoying and painful situation to the patient and oftentimes a vexatious problem to the physician. Many times we find that a remedy which will alleviate the suffering in one will have no effect whatever upon another.

It has been quite generally understood for some time that this aggravating dermatitis was caused by the sap or juices contained in the roots, stalks and leaves of the poison ivy plant or vine. Many persons are so sensitive to this poisoning that they are affected by the smoke from a fire in which

there are leaves and roots of this plant; the smoke carrying enough of the irritant to set up the dermatitis.

I had a patient under treatment last summer for another ailment which I had been treating with ultraviolet rays. He came one day for his treatment and informed me that he had been swimming in a small inland lake near by and had run through some poison ivy vines. His feet were swollen and presented a typical appearance of *rhus* dermatitis with the itching and burning which accompanies it.

I asked him to let me try the ultraviolet rays on his feet as an experiment and he readily consented. The result was immediate relief and, as it did not spread, I felt justified in the belief that the lamp had done the work.

With this case in mind I used the rays on the first patient who presented himself with this condition and my results were the same. I have treated five cases and in all of them have secured the same gratifying results, with no bad after effects.

One patient was suffering intense itching and pain and had lesions upon her feet, legs and arms, with considerable weeping. After one application of the ultraviolet rays this weeping surface dried up, but she returned for another treatment to be sure that she was free from it. She stated that the itching ceased before she had reached her home, which was about a half hour after the treatment. To say that these patients are gratified would be putting it mildly.

Thinking that this might be of interest to the readers of CLINICAL MEDICINE and that further reports may prove whether this treatment will work out in a large number of cases, I am sending this to you for publication.

RAYMOND G. TUCK,  
Brown City, Michigan.

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#### IMMUNIZATION AGAINST TUBERCULOUS INFECTION

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We recently called attention to a vaccine prepared by Professors Calmette and Guerin from a bovine tubercle bacillus. A virulent strain of this bacillus was passed through a long series of cultivations on a potato medium, treated with glycerine and ox bile until a very attenuated strain was obtained, and the bacillus became so modified that it proved nontuberculogenic, but remained

capable of provoking abundant antibodies and agglutinins. Animals treated with this vaccine were unaffected by intravenous injections of virulent bacilli. Since the first publication of their paper in 1920, investigation has been continued, and a paper describing the extension of this method to infants has now been published (*Annales de L'Institut Pasteur*, February, 1926, p. 69).

After 230 successive subcultures, during thirteen years of growth on a glycerinated bile potato medium, it was found that the organism was rendered so attenuated that it could be injected in a living state in large doses into mammals without giving rise to disease, and it conferred upon them the power of resisting the intravenous injection of 5 mg. of living, virulent bovine bacilli, which proved fatal to nonvaccinated animals in two months. Not only did this vaccine prove effective against experimental, but also against tuberculous infection conveyed in the usual way in monkeys who are among the most susceptible animals to infection.

Having experimented thus far, Professor Calmette consented to try the method on infants, selecting those who were being brought up by tuberculous parents or attendants. The vaccine was administered by the mouth during the first ten days of life when the bacilli would be readily absorbed by the upper part of the small intestine. The first infant on whom it was tried was one obliged to live with a tuberculous grandmother. Three doses were given at intervals of a few days in July, 1921. No ill effects were noted and the child today remains in perfect health. Since this time numerous infants have been similarly vaccinated. The vaccine is given by the mouth in three doses of 10 mg. each during the first ten days of life. It can be mixed in a spoon and given with a little milk. No discomfort has attended or followed its administration. Five hundred and eighty-six infants during the first few days of life have been thus immunized in France since July 1st, 1924. All of these have been infants in more or less close contact with one or more persons suffering from tuberculosis. On January 1st, 1926, ninety-six of these children had died from various nontuberculous causes, and eleven from what was deemed to be tuberculosis. This figure is in sharp contrast with similar nonimmunized children brought up similarly in contact with tuberculous persons, of whom more than 25 percent die within the first year of life.

The evidence is that the immunity obtained by this vaccine endures as long as the bacilli in the vaccine survive (probably about a year) after which it may be necessary to repeat the administration in the same way as it was given at first. In animals this repeated treatment has not been followed by any adverse effects. It seems probable therefore that children would incur no risk and would be benefited by an annual repetition of this vaccination treatment.

It is yet too early to form a tentative opinion of the value of this measure, yet it would appear probable that in the future 93 percent of the children of tuberculous parents, even if brought up in a tuberculous environment, can be protected. This immunization appears to be so simple, harmless, and easily administered that during the next few years there should be no difficulty in carrying out its employment in a sufficient number of infants, so that a positive opinion of the value of the procedure may be obtained. It is to be noted that this serum should not be given to persons already exposed to infection, hence the necessity of employing it within the first few days of life.—*Canad. M. A. J.*

#### CALOMEL AND BARBITAL

Down here in Louisiana we give large doses of calomel, and unless they are carefully handled they are likely to cause a good deal of nausea. We have our calomel put up in two-grain tablets, and three or four of these (six to eight grains) fit nicely into a capsule.

We order one such capsule as this, together with one five-grain tablet of barbital, to be taken at bedtime and followed, *four hours later* (*not "next morning"*) by a dose of a saline laxative, after which the patient is to lie on his *right* side. The results are highly satisfactory.

Of course, it does not matter in what particular form the drugs are administered, but all the other suggestions should be followed out accurately. The barbital makes the patient sleep soundly and also seems to make his stomach drowsy, so that it is not upset by the calomel. Then, before this effect passes off, we give the salts, so that the removal of the calomel will be complete by morning.

The lying on the right side is important, too, because this permits the saline to escape promptly through the pylorus. If the patient lies on the left side, the fundus of

the stomach will be a bag filled with salts solution which will take some time to escape and probably cause trouble.

By following out this procedure, we are able to give our patients the beneficial effects of thorough calomel action, without any nausea.

JOSEPH J. FRATER,  
Shreveport, La.

[A very sensible suggestion! How many of us are *thinking out* rational combinations of drugs to produce certain effects? We feel sure that a good many of our readers are doing work like this. Why not tell the rest of us about it, as Dr. Frater has done?—Ed.]

#### THE DE FOREST-BALDWIN "ADJUSTMENTS"

Chiropractors and osteopaths in their advertisements today are playing up a newspaper story regarding the alleged result of certain so-called research work done in the anatomic laboratory of the Ithaca Division of the Cornell University Medical College. It seems that Dr. Henry P. de Forest of New York City and Dr. Horace G. Baldwin of Tannersville, N. Y., were permitted to work in the laboratory just mentioned, because they desired to determine whether there was any anatomic basis that would explain the relief of certain symptoms which was said to follow manipulations which they performed. The de Forest-Baldwin thesis seems to be that a wide train of symptoms are caused by "sacroiliac dislocation" and that manipulations that "reduce" this result in cure. No member of the staff of the medical college was engaged in the investigation, and according to the professor of anatomy at Cornell, neither Dr. de Forest nor Dr. Baldwin was able to demonstrate any anatomic basis that would explain either the alleged symptoms or the alleged results. Nevertheless, wide newspaper publicity has been given to the de Forest-Baldwin performances. According to these news articles, both of the men have successfully treated thousands of cases by their peculiar methods, and the conditions claimed to be susceptible of cure by these methods are diabetes, Raynaud's disease, sciatica, nervous prostration, neuritis, angina pectoris, etc. The medical profession might, charitably, have supposed that Drs. de Forest and Baldwin had been the victims of some overenthusiastic newspaper reporter,

but a letter written by Dr. de Forest during the past few days makes such charitable excuses difficult of application. A woman, suffering from diabetes, who read the newspaper puffs of Drs. de Forest and Baldwin, wrote to the first-named physician about her case. Dr. de Forest answered in the following words:

Whether I have discovered a cure for diabetes or not is a debatable question. My medical friends for the most part do not agree with me. The patients, not a very large number, it is true, but still enough to enable me to form an opinion, do not agree with my medical friends, for they are getting well, or have entirely recovered. Whether your condition is one that is amenable to this particular form of treatment, I could not tell without a personal examination and an accurate diagnosis. This could only be secured by your coming to New York for the examination. If you decide to do this it must be by appointment, and it will be at least two weeks before I can fulfill my present engagements.

J. A. M. A.

[The exploits of these gentlemen are also recorded in a recent number of the *Literary Digest*.

Moral: Don't believe everything you see in the newspapers—or even in the magazines of national circulation. The ignorance of many newspaper reporters, regarding medical matters, is enormous; and the news-magazines get a good bit of their material from the daily papers.

When you see a report of some revolutionary progress in therapeutics in some reputable medical journal, it is time enough to get excited.—ED.]

#### DIETARY SUGGESTIONS IN PREGNANCY

In pregnancy eating meat more than once a day may be injurious to health. The physician may advise cutting meat out of the diet; if so, an egg dish may be substituted. Beef, mutton, lamb, poultry, and fish are more digestible than pork.

Overeating is dangerous in pregnancy, and it will not increase nor even help maintain the milk supply. The average woman of normal weight should not gain more than 20 pounds during pregnancy; the overweight woman may be better for gaining less or not at all.

Breads and cereals should be made of whole grain because of its high mineral and vitamin content. Whole wheat, oats, corn, and other grains can be obtained in

flour or cereal form. Cereals may be used for breakfast foods and in mush, muffins, puddings, and soup. Butter or cream served on food adds greatly to the vitamin as well as the fuel value of the diet.

The green leafy vegetables such as spinach, chard, lettuce, endive, cress, cabbage, kale, collards, cauliflower, brussels sprouts, string beans, dandelion greens, turnip tops, and beet tops have a value in the diet far greater than tubers, such as potatoes, or root vegetables, such as carrots, or legumes, such as peas and beans. The leafy vegetables, and fruit, either fresh or dried, should be used freely by every mother. They are not fattening. The overweight woman should reduce her use of sugar, potato, bread, and cereal.

Plenty of fruit and vegetables, with the help of whole-grain breads and cereals, make the diet laxative.

DOROTHY REED MENDENHALL,  
U. S. Children's Bureau.

#### THE DOSE OF ACONITINE

Aconitine has not been studied so carefully by physicians as it should have been, for the reason that, in the early days of the use of active principles in therapeutics, Dr. John M. Shaller wrote a little brochure entitled "Shaller's Guide" in which he attempted to teach how to use these active agents, the alkaloids of botanic drugs. Dr. Shaller was not a dosimetrist; he had never accepted the methods laid down by Burggraeve and, as a consequence, fear and suspicion were engendered in the minds of the profession as to the safety to the patient, especially children, in using these medicines.

Aconitine, the greatest of all antipyretics, suffered most from his interference. He ordered: "One granule (1/800 gr.) of the drug every two, three or four hours; children from eight to twelve, one-third of this dose, in solution; children under eight, one granule (1/800 gr.) for each year of the child's age and one extra, dissolved in twenty-four teaspoonfuls of water; one teaspoonful half hourly to effect, remedial or physiologic."

This teaching has been a stumbling block in the use of this valuable drug ever since its introduction into the United States, notwithstanding the efforts of the writer to have the practice of Doctor Burggraeve adopted.

In looking over the books of Doctor Burggraeve, I find many references to children,

but only one applying to infants at the breast. In his handbook of "Dosimetric Therapeutics," he says: "*avec les enfants à la poitrine, la nourrice prendrait la medecine*" (with infants at the breast, the nurse should take the medicine")—and this in connection with disease other than febrile, as it would be absurd to give the medicine to the nurse for the child's high temperature, she being normal and free from the exciting cause of the fever. I have used this practice, long before I knew anything of Doctor Burggraeve, especially in infantile constipation.

The great Belgian studied his remedies and arranged the dosage to safely fit the symptom and the patient as well. In the use of aconitine he adopted the amorphus alkaloid, 1/134 gr., or 0.5 mgm., as his standard dose. This is equal to 1/800 gr. of the crystallized aconitine which we use in this country. With a rising temperature, he gave this dose every 10 or 15 minutes until the thermometer showed that the medicine had the pyrexia under control; he then lengthened the interval between doses *pro re nata*, the end being attained when the temperature became normal or physiologic action supervened.

This reasoning is based upon the action of the leucocytes in their battle with the cocci, as naively told by Doctor Burggraeve: "In some forms of inflammatory disease, in the battle royal between the leucocytes and the cocci, both are killed, but as the leucocytes have the greater number of refills for their ranks the ultimate result is against the cocci in a majority of cases." So it is with aconitine as against a hyperpyrexia—both are killed, the toxic part of the aconitine and the high temperature, in the battle which ensues between them. The death of the drug is shown by the quiet, contented condition of the patient; the thermometer showing the end of the high temperature.

As to the work done with aconitine in the United States, the writer has used it in 1/800 gr. doses in pyrexias in children from four months old up to adults of over eighty years of age and with perfect success in both instances; the thermometer being the guide as to the frequency of the administration of the medicine, when to lengthen the interval and when to stop its use.

The writer fully accepted the administration of aconitine and of the other active principles as established by Doctor Burggraeve and his reason for making his standards, that it is the symptom which is to be

met without reference to the age of the patient. A temperature of 101° to 103°F. must be met with thirty-minute dosage of the drug; while a temperature of 105°F. should be fought with from ten- to fifteen-minute dosage; and the results have proved both his logic and his wisdom.

On one occasion the writer took, by mistake, a veterinary tablet of aconitine 1/72 gr., for renal congestion. The congestion was promptly relieved. Three hours later, there was a strong tingling in the extremities, with a slight dryness of the fauces. These symptoms passed away in about one hour and there were no untoward after effects.

In all cases where a temperature above normal exists, the remedy of choice should be aconitine. Its action is positive and always the same, under the same conditions, consequently the prescriber knows what to expect at his next visit, whether it is one hour or one day later, and he finds his expectations fulfilled.

Not only as an antipyretic is aconitine to be relied upon; in congestions of any of the internal organs, it acts with certainty and without loss of time, as is illustrated by the relief expressed by the patient. In neuralgias and neuritis, it does equally good work and the relief to the sufferer frequently adds materially to the reputation of the medical attendant.

In all cases where aconitine is indicated, the heart action should have attention and, if weakness is shown, the addition of a heart stimulant suitable to the condition is advisable.

Aconitine, whether administered alone or in combination, should always be given in solution and by mouth, never hypodermically.

W. T. THACKERAY,  
Fowlerton, Texas.

#### DOSE AND EFFECT

Many fluctuations in the ideas of maximum, minimum and optimum dosage are recorded in the history of medicine. Common sense in this regard has grown hand in hand with the development of scientific medicine, and both huge and infinitesimal doses have, for the most part, disappeared from practice. Recently, Cameron and Mackersie have experimented with products of internal secretion, indacantine, strychnine and nitrate ion. The results obtained indicate that, although sufficiently

large doses either cause toxic effects and death or are limited by rapid excretion, nevertheless, over a limited range, dosage bears mathematically demonstrable relation to effect. This work would seem to be a good answer, if an answer is needed among intelligent men, to the claims of drugless and near-drugless cults, sects and philosophies. Its scientific value rests in the equation which has been evolved, and by which it may be possible to standardize the dosages of different drugs and calculate the effects of different doses of a given drug.

—J. A. M. A.

#### THE "FINICKY" APPETITE

Dainty serving of food goes a long way in arousing appetite. A small table and china "all his own" or being allowed to sit in mother's place at the table may have a great appeal. Let the child know that when he learns to feed himself in a quiet, efficient manner he may then come to the table with the "grown-ups." This may give him incentive to strive for perfection.

Occasionally consult the child's preference about his food, but never let him feel he is free to dictate as to what he will and will not eat. Teach him that certain foods are required if he is to grow big and strong and rugged like the "Daddy" he adores. Do not insist on pushing him; lead him once in a while.

Little harm will result from his missing a meal now and then. There are times when food is repulsive to children for no apparent reason. There are other occasions when their mood is such that they enjoy arousing anxiety, worry, and solicitude in the parent. You will find when this is the case and the child says he does not want any lunch that it is wise to reply that it is quite all right and if he is not hungry he may run out to play. You have thus removed every resistance which he hoped to battle against, and if this is just an emotional attitude it is unlikely that he will take any chances on missing a meal in the future.

Remember that children are quick to copy and if, for instance, grandma is on a limited diet and cannot eat this or that, or if father frankly emphasizes his likes and dislikes, the child is apt to become finicky and notional in his eating. The child who early learns to eat with a good appetite whatever is set before him will be saved much discomfort and embarrassment in later life. Of course, the child should have plain,

nourishing, easily digested food that is well cooked and served in small quantities.

Regularity in serving meals is of great importance, not only for physiological reasons, such as keeping the intake of food evenly regulated in order that the digestive apparatus may work smoothly, but for other reasons as well. Obviously, if a child learns that food is available at any hour of the day he will not be greatly concerned in eating at any definite time. It should be understood by the children and strictly adhered to by the parent that if the youngster does not eat at the allotted hour he gets nothing until the following meal. Care must be taken, however, that he is not fed between meals by other members of the family or supplied with pennies with which he can buy sweets to appease his hunger during the interval.

The child should not be hurried during the meal, nor should he be given sufficient time to play and dabble with his food. The ordinary meal for a child should not require over 30 minutes at the most. If by that time he has not finished remove the food without comment.

D. A. THOM,

Boston, Mass.

#### THE ATOMIZER IN THE PROPHYLAXIS OF RESPIRATORY INFECTIONS

Twenty-five years ago it was the usual thing to see a good nebulizer outfit in the offices of many physicians, some with three or more solutions for spraying the nose and throat. Now it is rather uncommon to see such an outfit in use, and the writer thinks it is a great mistake to get away from that mode of treatment. There are few methods that will do more in the prevention of many diseases, or in the treatment of most nose and throat conditions. The writer was health officer in a western city for six years and did not have an epidemic of anything during that time, though there was one of diphtheria when he took the office and one of smallpox shortly after he left it.

Here is an instance which is typical of many others:—One Sunday, in a closed room scarcely large enough to accommodate them, there were twenty-five little children being taught their Sunday School lesson. They were seated around a table and one of them coughed, sneezed, and sniveled severely all the time. Next morning she was quarantined on account of typical and severe scarlet fever.

The teacher was communicated with, the names of the children exposed were obtained, and their parents seen. The conditions and dangers were made clear to them and they were given a prescription for a mixture of phenol, menthol, camphor, eucalyptol and liquid petrolatum, with instructions to spray the noses of the children three or more times daily, keep the bowels active and prevent undue exposure to the severe winter weather. The infected child was isolated from the six others in the family, who were given the same care and treatment as the others who were exposed, and all remained free of scarlet fever.

Similar treatment has been equally successful in preventing measles, whooping cough, diphtheria, etc., and my experience in the army was even more remarkable.

When influenza hit the camp, in the Fall of 1918, I happened to be the sanitary officer of the post and had charge of all the sick in the quartermaster's department, where over 350 persons were employed. The quartermaster called me the day the news reached him and asked me to give a talk on influenza to his employees. Here is the gist of that talk:

"Influenza is nothing more than the old-time *la grippe* that struck the country many years ago, and there is very little excuse for getting excited or scared about it. Take good care not to stay in poorly ventilated places or in crowds; do not expose yourselves to wet weather or sudden changes from hot to cold; keep the bowels active; eat wholesome food; drink plenty of water, but no alcoholic beverages at all; and keep the nose well sprayed, three or more times a day, with a mild, nonirritating antiseptic solution, and the chances are ten to one that you will not have influenza."

The quartermaster asked for a prescription for a spray and the following was given:

R Phenol	M. ii	( 0.130)
Menthol	gr. iii	( 0.200)
Camphor	gr. ii	( 0.130)
Eucalyptol	f3. ss	( 2.000)
Petrolat. liq.	q.s. ad f5. ii	(60.000)
M et. Sig:—		

Spray the nose three or more times daily, holding one nostril and inhaling deeply while pumping the atomizer.

The quartermaster made mimeograph copies of the instructions and gave one to each of his employees with orders to follow them. Two months afterward he said that among his 350 employees not a case had

developed. Was this a mere coincidence when there were more cases in the city than the doctors could well take care of, and over 300 in the camp? Most assuredly not. The atomizer had a big part in the results.

The argument in favor of this practice is easy to see. All bacteria when exposed, during the time they are out of the system in being transferred from one host to another, become much lowered in vitality, and if a mild, nonirritating antiseptic is applied to the mucous membrane in an oily menstruum which holds them enmeshed, they will have little chance of being able to reproduce the disease in a new host, when to this is added his own natural resistive powers.

I have been exposed to almost every kind of contagion in the last twenty-five years and have escaped all of them. It has been my regular habit to spray my nose well after every exposure, and often before, if I know I am going into the presence of such cases. Consequently, my faith in this procedure is very strong.

It has been my good fortune never to have had cases of middle or internal ear trouble following scarlet fever, influenza, or other contagion, and I am sure the reason is none other than the fact that I never vary the habit of spraying the nose and throat as soon as the diagnosis is made, and of keeping it up throughout the course of the disease.

About a year ago I treated a family for influenza, some of them having quite severe head symptoms, but all responded readily to the treatment. A family next door, with children about the same ages as these, had it and three of them had to be operated upon for mastoid infection. One was in the hospital for nearly two months and is still weak and emaciated. I believe that the atomizer, used religiously in these cases, would have prevented the mastoid trouble and all of its systemic devastations. Being such an easy and harmless procedure, it is certainly worth trying.

The prescription given may be varied somewhat, with equally good results, or one of the good, ready-prepared, antiseptic, oily sprays may be used.

Many of the doctors in Cleveland prescribe drops of camphor, menthol and liquid petrolatum, to be dropped into the nose, but the writer believes they would get much better results if this were applied with the atomizer. The "drops" flow along the floor

of the nose and into the throat, while the atomizer throws the remedy to *all parts* of the nasopharynx.

AMOS T. FISHER,  
Cleveland, Ohio.

### BUILT-IN ANESTHETIC APPARATUS

Baylor Hospital, Dallas, Texas, has a very ingenious, economical and satisfactory way of supplying pressure, suction and gaseous anesthetics to all operating rooms.

Instead of having small tanks of oxygen and nitrous oxide and a machine for producing pressure and suction in each operating room, the whole tank installation is in the basement, where they have a large reservoir for air under pressure and another in which negative pressure is maintained; also batteries of large tanks of oxygen and nitrous oxide. All these various tanks are connected by pipes with every operating room, so that they may be turned on as needed by means of hand valves. A small tank of ethylene is fixed to the end of each box that carries the other pipes, and is thus made available for instant use in all suitable cases.

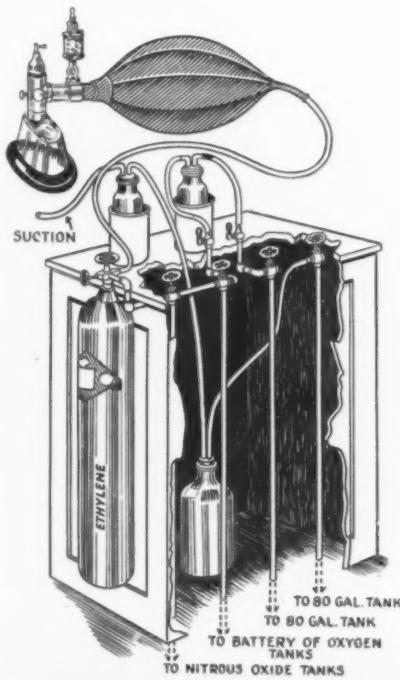


Fig. 1

Most surgeons who have used the well-known ether vaporizer and suction apparatus in tonsil work and other mouth and throat surgery have experienced the inconvenience of having the container, or suction bottle, fill up with secretions and water during an operation and of having to stop work until it could be emptied. Such trouble is avoided by the arrangement shown (with the rest of the installation) in Fig. 1. It will be readily seen that there is an accessory suction bottle in the lower part of the anesthesia cabinet which takes care of any overflow from the bottle which is visible on the top.



Fig. 2

The face-piece and rebreathing bag are of the Sanders type, which is in use throughout the hospital.

When it becomes necessary to give an anesthetic outside of one of the operating rooms, the portable type Sanders apparatus, shown in Fig. 2, is used.

The built-in cabinets were devised and constructed by the personnel of the hospital and are slightly as well as extremely practical and convenient.

GEO. B. LAKE,  
Chicago.

**GAS-OXYGEN ANESTHESIA**

The development of gas-oxygen anesthesia is making rapid strides, and has been influenced greatly by the perfection of mechanical apparatus for its administration. The so-called contraindications of the past were due not to the gas-oxygen but to ignorance, absence of suitable high-grade equipment and poor technic. It has shown itself to be an ideal anesthetic—one which may be used where others would be employed at a disadvantage—because of its nontoxic nature.

The action of ether and chloroform tends to disorganize kidney and liver function. Their action upon the heart is somewhat less severe, but that organ suffers considerably. These two anesthetics, on account of their destructive nature, are undesirable in many cases.

Gas-oxygen is a direct anesthetic having no action on the body tissue cells, hence it is nondestructive. It can be used in the x-ray room with safety, because of its nonflammable nature.

Its rapid and easy administration makes it a pleasant anesthetic for both adults and children. No damage is done to the lungs, heart or kidneys, whether these organs be normal or not. That the coagulation time of the blood is shortened with gas-oxygen is important, this being a great aid in tonsillectomies. It is ideal in surgery on the old, being of great value in prostatectomies on account of the kidney complications which follow the administration of all other anesthetics. In abdominal work, complete relaxation may be obtained; and it reduces the postoperative sequelae to a minimum and at the same time shortens the period of convalescence.

Many physicians have the false impression that blood pressure is elevated with administration of gas-oxygen. This is not so. Blood pressure is elevated only on account of the patient's fighting and struggling. This is practically absent with gas—which cannot be said of the other anesthetics.

Because of its nontoxic effects, it is indicated in operative work on diabetics, helping to eliminate the danger of postoperative coma.

The clinical research work which has been undertaken proves that it is the ideal anesthetic in all toxemias caused by infections.

Dental surgery has made good use of this anesthetic since its first appearance.

Perhaps its greatest use is in the field of obstetrics. Intermittent administration; i.e., a few inhalations, given for five to ten seconds at the onset of each contraction of the uterus, gives a good analgesia. The inhaler is removed between contractions, thereby restoring at once all sensation. It has reduced the infant mortality and, owing to the reduction of pain, has encouraged the mother. By stimulating the uterine contraction force, it shortens the later stages of labor. Where forceps are indicated, light anesthesia with gas is resorted to.

One of the most important points in favor of gas-oxygen in obstetrics is the absence of uterine relaxation. Earlier lactation occurs with the gas-oxygen than with any other anesthetic. After a cesarean section, the mother suffers less shock than she does with either ether or chloroform. This last point has been brought forward by many leading obstetricians.

In conclusion, it may be said again that gas-oxygen has thrown aside its old excrescences; and the early blunders associated with this anesthetic are at last being forgotten by surgeons who were assisted by unskilled gas-oxygen enthusiasts in the days when this anesthetic was in an experimental stage.

A. E. HUDSON,  
Prairie du Chien, Wisc.

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**TREATMENT OF LETHARGIC ENCEPHALITIS WITH SODIUM SALICYLATE, INTRAVENOUSLY**

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In reading your abstract of a clinical lecture by Dr. L. F. Barker on Lethargic Encephalitis in the July number, I find no active treatment suggested aside from lumbar puncture. I wish to report the following case which responded very readily to active treatment:

*History.* Young widow, 28 years of age. For the past three weeks, she was treated for influenza, with no improvement, and was given up to die.

*Present Conditions.* The patient looks very ill. Pupils irregular, slow response to light; tongue looks thickened, with dirty-white coat on surface; hard to get her to open her mouth. Temperature (8 A.M.) 102°F.; pulse 120; respiration 24. Hard coughing spells; moist rales heard over bronchial tubes anteriorly. Stiffness of neck

muscles; knee jerks exaggerated; patient semi-delirious.

While examining her, her head became retracted, eyes rolled back, breathing became labored, and patient became moderately cyanotic. This lasted for about two minutes, when she relaxed. History of two similar attacks the day before. Patient was drowsy most of the time; and would answer questions very slowly and give only semi-intelligent answers.

*Diagnosis.* Probably lethargic encephalitis.

*Treatment.* Sodium salicylate, 1.0 Gram, intravenously, twice daily for three days, then daily for four days. Ice-bag to head in afternoon; citrate of magnesia in morning; general care; liquid diet.

Improvement began after the second dose. At the end of one week, the patient appeared normal.

I have had good results with sodium salicylate in two other previous cases.

OLIVER H. GRIFFITH,  
Wheeling, W. Va.

#### HOW TO CHOOSE YOUR PHYSICIAN

- 1.—Be sure the physician is licensed.
- 2.—Make certain he is a doctor of medicine.
- 3.—Avoid the sensationaly advertised doctor.
- 4.—Do not be impressed by the elaborateness of offices.
- 5.—Membership in a society indicates that he is reputable.

6.—Does he take medical journals?

And, finally, having chosen your doctor, remember that even though a doctor, he is still human and not a superman. Do not expect him to do the impossible.—*Popular Health.*

#### THE DECOMPENSATING HEART IN OBSTETRICS

Many writers express the belief that pregnancy has very little effect upon the heart, but it has some effect even on the normal heart, since it produces serological and morphological changes in the blood which must have some result. The displacement of the heart by the rising of the uterus has some mechanical effect upon the heart. Nine times out of ten in the early months there are some murmurs, and slight accentuation of the second sound, and there is frequently an increased pulse rate. The in-

creased action following exertion is more frequent in the heart of the pregnant woman, and the heart already diseased before the advent of pregnancy is always affected.

A recrudescence of endocarditis in pregnancy is common, and myocardial changes in diseased hearts occur more often during pregnancy. The reasons for these changes may be found in the alterations of the blood during pregnancy, or in the additional work necessary on the part of the heart. There is no question but that a diseased heart is likely to decompensate in any of the accidents of pregnancy, such as vomiting and eclampsia. In any hemorrhage the heart must be watched.

Any infection during pregnancy will affect both the endocardium and the myocardium. The hyperkinetic condition of the blood predisposes to thrombosis, both in the veins and in the heart. During labor the actual strain on the heart in the bearing down, and the uterine muscle action, must not be forgotten. One of the greatest strains, and one that may paralyze even a normal heart, are the tumultuous labor pains. They sometimes produce almost a state of shock in a heart already diseased, and may lead to decompensation.

When a woman with heart disease becomes pregnant, she must be watched carefully during the early months, for at that time the toxic changes occur. Many cases of auricular fibrillation develop early in pregnancy. Later the mechanical elements are more in evidence; the reduced vital capacity of the lungs, the increased blood pressure, which is often caused by the sluggish circulation in the capillaries, are often observed. The increased weight of the patient throws a burden on the heart. The lordosis of pregnancy causes a strain on the heart by disturbing the equilibrium of the body. There is an actual increase in the amount of blood during pregnancy and the heart has more to pump.

As to the effects of the decompensated heart in labor, as a rule, if a woman has carried her cardiac reserve up to the time of labor she will go through the first stage without any disturbance, but the careful observer will note that the pulse is a little more rapid, the face is pale and that labor causes a little more exhaustion than in the normal woman. Respiration is likely to be

deepened and there is more cyanosis around the lips. Coughing between the pains is very significant, as is restlessness. I have found many women who have actual pain in the heart, and a large number have complained of pressure or compression, symptoms.

The decompensated heart does not often show itself for the first time during the puerperium, but if a woman shows signs of decompensation during labor she is likely to go to pieces and die during the puerperium. I have seen two cases of thrombosis of the heart, without any signs of cardiac disease, one six and one nine days after delivery. Autopsy revealed a mural thrombosis in the heart which in all probability occurred during pregnancy, was carried through labor, and the end of the vessel turned over during the puerperium with resulting thrombosis and death.

In the treatment of a decompensated heart the first thing is to call in a cardiologist. I always send my patients to an internist for a general physical examination as soon as I am engaged by them and in this way have discovered many heart cases which were missed before. My experience has been that if a woman has one attack of decompensation during pregnancy and gets through with it well under treatment, she can usually be carried through at least to the viability of the child, with proper care. If she has two attacks it is very difficult to carry her through. I have made it a rule that if the first attack of decompensation is successfully treated, and in spite of good treatment a second attack occurs, the uterus should be emptied at whatever period of pregnancy the patient may be.

If the woman has complications which may produce decompensation it is necessary to watch her carefully, and if any signs arise, to empty the uterus at once. If kyphoscoliosis is present the uterus should be emptied, because she cannot stand the crowding of the enlarging uterus, and it must be emptied for mechanical reasons. Tuberculosis is an added burden and often demands the termination of pregnancy, as do some cases of kidney disease.

As to the method of emptying the uterus, if it is necessary to bring on an abortion it is certain that if the patient should become pregnant again it would be necessary to repeat the procedure. It is a very cruel thing to be compelled to kill babies to save the

life of the mother, and I believe one is well justified in preventing recurring pregnancies. Conditions may arise during labor where it is necessary to sacrifice a living infant, but it is unreasonable to expect a physician to repeat this in future pregnancies, and the best plan, when it is necessary to operate because of heart disease, is to follow this with sterilization. The operation can be done under local anesthesia, abdominally, without shock and with good results in the early months of pregnancy. If the child is viable, a cesarean section can be performed under local anesthesia, or labor can be induced in the usual way.

If a woman goes into labor with a decompensated heart one must have everything ready for instant operation, and have all heart stimulants at hand. If a woman has a contracted pelvis and heart disease, it almost demands cesarean section. As soon as the cervix is dilated I deliver the baby, obliterating the second stage of labor. An important thing in the third stage is to save blood. Later if there is a congestion which one wishes to relieve by venesection it can be used. I have not seen any value from this procedure in heart disease.

When general anesthesia is necessary in heart cases ether is the choice. With suggestion, novocaine (procaine) and a small dose of morphine one can do an episiotomy and deliver the baby.

The treatment of heart cases threatened with decompensation during the puerperium is the same as in other cases. A woman with heart disease should not nurse her baby much, supplementing the breast feeding with artificial food.

JOSEPH B. DELEE,  
From *Bul. Chicago M. S.*

#### REMEDIES FOR IVY POISONING

Numerous methods of treatment for ivy poisoning have been used in the past. There is no real cure or preventive that will take the place of caution. The various salts of lead and zinc have been used as poison ivy remedies. They neutralize the poison to a certain extent, but not completely. The best and most effective preventive proves to be salts of iron, particularly iron chloride, which completely neutralizes the poison, though it is effective as a remedy only if used in the very early stages. The use of iron chloride to the extent of 5 percent in a half and half mixture of alcohol and water is recommended. If the hands and

face are bathed freely in this solution either before or immediately after one goes into a region known to contain poison ivy or its kindred plants, no ill effects need be expected. The remedy is cheap, is easily obtainable at any drug store, is nonpoisonous and safe.

In ivy poisoning cases that actually develop and become acute, the treatment is based on a recognition of the nature of the injury. The effects of ivy poisoning on the skin are much like those of a burn, and the treatment suggested resembles that successfully used during the War in burn cases. The affected parts are first bathed with iron chloride solution, to neutralize the poison. Then the skin is dried, and melted paraffin painted over it. A thin sheet of cotton is laid over the wound, and this also is covered with paraffin. The affected area is thus protected from the air and from rubbing, and new skin is given a chance to form.

JAMES B. MCNAIR,  
Field Museum of Natural History,  
Chicago.

#### MORE ABOUT SMALLPOX

*Case 1.*—On March 13, 1921, I was called to see Mrs. L. W., who had been shopping a few days before and had become ill in the afternoon of the same day, having a chill and fever.

I saw her about 4 P.M., and found her temperature 104.4°F.; pulse 76. The patient looked ill; breath very offensive; tongue coated; pharynx slightly reddened; a number of bad teeth; complexion rather sallow; headache for two days; complained of pain all through abdomen, especially on the right side; no special tenderness in region of appendix or gall bladder; nauseated, but had not vomited. I jokingly said, "She may be coming down with smallpox or some infection, but not definite at present."

*March 14.*—Patient looked and felt ill, Temperature 101.4°F.; pulse 75.

*March 15.*—Temperature 99.2°F.; pulse 58. Felt much better; Eyes puffy; tongue "geographic." I asked them to send a specimen of urine to my office.

*March 18.*—I was asked to call. I found many papules on arms, face and body—some distinctly shotty. I learned that a few "pimples" had been present on the forehead on March 16.

I told the family I was suspicious of smallpox and that I would have the Health Officer call. She phoned that afternoon and

said the Health Officer had called it chickenpox. I replied, "Just remember they are sometimes mistaken." I sent in my report with this statement, "*Clinical history very suspicious of smallpox*; Health Officer says 'Chickenpox'."

*March 22.*—I was asked to see the patient. She was very cross and miserable and hard to manage; had walked the floor all night, but declared it was just a case of "old-fashioned chickenpox." (She had done some nursing.) The eruption was very bad on the face and all parts of the body—also on the soles of the feet and the palms of the hands.

That morning I phoned to the Health Officer requesting that someone be sent to that home as I was positive it was smallpox. The afternoon of March 23 they reported that the officer had called and at last had made the diagnosis. In the meantime every opportunity had been given for spreading the disease, as a boy and girl were both attending school and Mr. R. was taking orders for wares from house to house. I was told that four cases developed from this source.

From March 28 to April 9 the patient suffered a great deal from the pustules that formed in the ears. She was unable to sleep because of the pain and was deaf for some time. She had been vaccinated when a girl.

Mr. R. came down with a rather severe attack. He had been vaccinated when a boy, and at the health office on March 23. On March 31 I saw him at 7 P.M. His temperature was 103.2°F.; pulse 80; not able to work. He had headache and his arm was quite sore.

*April 1.*—No fever that morning; at 7 P.M., temperature 102.8°F.; pulse 85. He had a chill in the night.

*April 3.*—Temperature 100°F.; pulse 66. Coughing considerably. I advised moving him home as I thought he might be developing the disease.

*April 5.*—Had a number of papules on the face, top of head, arms and under the tongue. First appearance of eruption yesterday.

*April 13.*—Doing well. Last call.

*Case 2.*—On June 11, 1925, I was called to see H. G., aged 18 years; helper in home. Had been there only since June 8. She was badly broken out on face, arms and a few eruptions on palms of hands. At first she said she had not been sick. Later I learned she had a chill and fever on June 5; a slight "breaking-out" on June 8. I diag-

nosed smallpox and called the Health Officer. She was taken to the Isolation Hospital. She had just completed high school; had never been vaccinated; had had chickenpox. I advised her employer to call her physician and have herself and baby (eight months old) vaccinated at once. She did so, but the baby developed a mild case of smallpox.

In regard to the first patient, I learned she had been visiting relatives when the children had been having measles and chickenpox. The clothes had been sent to a laundry and some hundred cases of mild chickenpox, so called, had developed. Later they were thought to have been smallpox.

J. M. McGAVIN,

Portland, Oregon.

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#### FEWER CLOTHES—MORE SUN— FOR BABIES

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The institution of sun baths for babies and young children in any American community is not easy because tradition and convention have been opposed to them for many generations. Climatic conditions in many parts of this country make warm clothing a necessity during the winter season. During the spring, summer, and fall, however, babies and little children wear much more clothing than is necessary. One has only to take off a baby's or a little child's clothes and watch him play in the sun to know that it is convention and not instinct which demands clothes at this age. Tradition also says that sunlight may injure a baby's eyes. If the baby's face is turned so that the eyes look away from the sun or if the older child wears a cotton shade hat in hot weather, the eyes will not be injured. Old traditions and conventions are hard to break. New traditions and conventions must be established by small groups and slowly the rest of the community will follow.

The technic of the sun bath will vary somewhat according to locality, climate, season, weather and facilities in the home. Sunlight is free to all and sun baths can be given to all babies at some season of the

year. Southern babies can have outdoor sun baths the year around. Northern babies are less fortunate, but even in our climate partial sun baths can be given nearly all the year and complete sun baths all the summer months. In practically all parts of the United States, preliminary outdoor sun baths can be started by the first of March.

A corner of the yard or porch should be selected where the morning sun shines warmly, but where the child will be protected from the wind. Here the baby's hands and face and head may be exposed to the sun for varying lengths of time beginning with five or ten or even fifteen minutes and increasing gradually during the month as the sun gets warmer. If the baby is turned first on one side and then on the other, both cheeks may be exposed without injury to the eyes. The hands may be exposed, at first, one at a time, later both together. The bonnet may be pushed daily further back until the whole head is exposed. In many parts of the country these preliminary sun baths may be started in February or even January. During these sun baths in early spring, sunburn need not be feared because the intensity of the sunlight is not yet very great. Later in the season shorter exposures may be necessary at first.

CHILDREN'S BUREAU,  
U. S. Department of Labor.

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(Concluded from Page 649)  
cure these laws, as it has done in a number of states.

Then, when you have it, we can help you to get it applied locally and aid in working out plans and programs. That's part of our job. We've been at it for twenty years.

Here is your chance for large, splendid, public service.

Play for the child is life—creation. Play for the adult is renewal of life—recreation.

You are in the life-saving business. So are we. Let's join hands and say, "For all of America we want life to be richer and more abundant," and then act on that declaration. Our children and our children's children will rise up and call us blessed.

# The Leisure Hour

Conducted by GEORGE H. CANDLER, M.D.

## Lost! One Millennium

WITHOUT any desire to be discourteous to the spirits who have again been communicating with Conan Doyle and the clairvoyant inhabitants of Australia, New Zealand, and other isles of the sea, I would remark that they seem to have been misinformed, or, being sprites, *not* nice spirits, have deliberately given out what is colloquially known as "a bum steer." Further, the Egyptologist who "deciphered the hitherto meaningless hieroglyphics on the Sphynx" must have erred in his translation, for Sphynx and spirits very definitely stated that on July 20th, 1926, the millennium would begin. Alas! only in mellifluous Mexico was any great change observable on or about that date—and one would have to be more than an optimist to see anything millennial about the "Mex" situation. Spirits, it seems, are becoming more and more unreliable and a great many of our best people are now preferring to consult the "witch ball," clairvoyant crystal or the weather bureau reports. Such citizens refuse to be happy unless they can feel, in the back of their minds, that a cataclysm—or at least a minor disaster of *some* kind—approaches. It is quite useless to point out to these anticipatory persons that unpleasant things enough will happen every day without the addition of a subconscious dread of something worse on a set future date. One knows, quite positively, that the bills he contracts during the current month will have to be settled "some time between the 1st and 10th of the next." We all are aware that before we have recovered from the Xmas orgy of spending, dear old Uncle Sam will be around after the income tax and right on his heels will arrive the property and personal property demands. Just about this time, too, come the clamors for light weight toggery and before these are fully met (if they ever are), the August sales of furs bring disaster in most domiciles.

Many a bacon-bearer who read of the surely approaching millennium had hopes—unexpressed perhaps—that, by July 25th, no

one in his family would be demanding furs, at least. Moreover, he had visions of the Internal Revenue Department sending him back an excess payment of \$6.40 he made in 1920 instead of persistent duns for a deficit of \$1.18 in his 1923 returns. Personally, I had doubts about the thing—especially when I learned that the spirits were actually chorusing "look out for July 20th" (*vide* Conan Doyle *et al.*), but went to bed on the 19th, not only resigned to the inevitable, but in rather an expectant state of mind, if you know what I mean? To be quite explicit, I went to sleep resigned to the inevitable waking up to meet the same old conditions, but was willing to be disappointed. IF the Egyptologist and the spiriteers had really hit it this time and July 20th ushered in that dear millennium, what a wonderful thing it would be!

Arising early, I looked out of the window and gazed long and soulfully over the adjacent landscape. Out on the lawn the tinted washlady was hanging the family "undies," et cetera, on the line and, as last week and the week before, she held clothespins in her mouth (a most unsanitary procedure), and stretched my pet B.V.D. out wrong side up so that they ballooned when dry and made people think I am more than the perfect 32, I really am. The cherry trees were full of young robins and a cat was sneaking under the rose bushes awaiting a chance to breakfast on one of them. It *looked* as though the prophets had again been emulating Balaam's celebrated ass—tho', for that matter, the ass *did* say something worth while, and, as usual, got a kick in his asinine ribs for doing so. In the millennium, doubtless, asses would keep still and not get kicked: everything indeed, would be just what it isn't today and bootleggers would lie (down and up) with the campaign contributor!

Thinking things over thus hurriedly, I rushed for the morning paper and the headlines gave me hope—and pause. The jailors in Chicago, it appeared, were giving hootch to such inmates of the bastile as chose to

remain "in residence." BUT, it seemed, they were doing this, not from a new-born belief in the brotherhood of man, but because they needed the money. To be sure they got plenty of what they needed, they traded on inflated prices and a C.B.D. basis. If the wan prisoner wanted a stimulant to relieve his depression he had to give the guardian of the gates a X spot before he could secure a poor half-pint of resuscitant. (They don't have "gin" in Cook County institutions, only resuscitants. They are more costly than hooch.) The Sheriff, the papers said, was "much disturbed" at the conditions revealed. The clever reporter did not state whether it was the conditions or the revelation thereof which most harassed him. Realizing that "being disturbed" had become a habit with the gentleman, I passed over the information without any outpouring of sympathy. I remember thinking, however, as I turned to another column in search of real Millennial information, that "WE POUR AT REGULAR INTERVALS" would be a fitting inscription over the jail entrance. After a century or two, when "old Chicago" would be dug up, the current archaeologists would (finally) decipher the legend and announce to a startled world that one of those intervals had elapsed and a dire "outpouring" of something or other was at hand. They might even then be able to find spirits of sorts to back up their assertions. Especially around the excavations. "Bad spirits never die," it is said. The good variety disappear rapidly.

The next item of news given prominence was the daily murder of a "gangster." Nothing at all millennial about a single killing like that. Had all the gangsters killed each other, one might have some hope. The news section proving thus uninformative, I tried the editorial page and found no mention of any great change having occurred. The revered Dr. Evans still told people to bathe often and eat slowly and the columnar humorist still passed bad spelling and masked profanity off upon a blasé public as wit. Wet wit one might term some of it. No, no sign of the millennium there.

The advertising pages might, however, lead the unsophisticated to believe that it existed. A number of merchants implored people to come and take away (or rather have delivered) anything their souls desired at less than the bare cost of the merchandise. Was a home needed? Five dollars down and as much more every week for ninety-nine years would bring it—in time—and

those who were still careless could get something that would stand any amount of abuse without running for a mere song. Yes, here, and here alone, could one find evidences of that great brotherly love and desire to make others happy which must accompany the Millennium. Perhaps the reporters, re-write men, editorial writers and columnists had missed the biggest story which so far had "broken" on this tired old world. A week would tell. It did. It is not necessary to add to the gloom of nations by dilating upon what was done to the unsophisticated who "believed what they read in the ads." *They*—by this time—know, however, that Barnum was one of the few real philosophers. Still, a lot of them will yearn to be born again and again!

Scanning the horizon from Mexico, Florida and Losanglaize to Chicago, Pennsylvania and New Jersey (with stops at many intermediate points), the conscientious observer is now constrained to report that no trace of the millennium, as imagined by most people and prophesied by the ghosts, can be discovered. It is still the very, very wicked yet wonderfully good old world we and our grandfathers were born into. There is, perhaps, more wickedness—and more goodness than there used to be, because there are more people and a freer intercourse between them—*much* more free! We know more than we used to know, do things more swiftly than we did; therefore, more things happen and everything (or *nearly* everything) that happens is known. Except, of course, the amount of campaign contributions, *why* they were made and who got 'em. Also where Aimee was when she wasn't home and who killed the pastor and female chorister under the crabapple tree at midnight. Little things like that may not be clear exactly and a few individuals may not realize that Calvin Coolidge caught five eight-ounce trout last Monday, or that he had about decided to be President again, but, generally speaking, the people of this country are quite aware that "you can't tell the depth of the well by the length of the handle on the pump" which is, after all, an advanced state of knowledge. We probably only have to travel a few thousand leagues to be ready for the millennium, and as I have sapiently observed before, when we are ready for it, it will (probably) arrive. *Pro tem* we can only wake up each morning, be thankful we are still alive and, carefully dodging traffic, endeavor to make conditions in the corner where we are as nearly per-

fect as possible. We should also put sterilized cotton in our ears to prevent paretic prophets from perturbing the penumbra of our placidity.

That does not mean that we should fail to heed signs and portents entirely. Neither, if we are really intelligent, will we class sane predictions regarding purely physical events with psychic prognostications. The warnings recently issued that climatic and crop conditions in this Land of the Fed and Home of the Swift, may, in 1927, not be as satisfactory as could be desired, should be regarded seriously. Natural laws can be studied; cycles can be recognized (after a while) and things which have happened at known intervals, are quite likely to occur again. Therefore, if, with certain well-recognized solar and terrestrial conditions existing, certain results have been observed, one may reasonably expect similar happenings should the same causative conditions recur. It might not be foolish for the plain, ordinary people to prepare, as best they may, for a "lean year." If there proves to be plenty, so much the better, but why get caught short—that is, if you can help it. Some of us are that always—and, if you have the right spirit, it's lots of fun racing one end round to catch the other. YOU enjoy it, don't you? Well, anyhow, have a good time—but keep an eye on 1927!

I simply have to doff my hat and salaam to two writers whose productions appear in *Harper's* for August. The salaam is most profound to Austin Lee, who in "Two Sonnets" presents this, the diadem of all descriptive phrases:

"The Moon  
She raised her skirts and hurried  
down the sky."

Of course, we all recognize poetical license and that sort of thing, but we didn't know the old man in the moon *wore* skirts! And, if Luna does, and has to "raise 'em and hurry," is it nice to call attention to the matter? Why not let her "withdraw behind a cloud," "veil herself in mist" or something noncommittal?

Wilbur Daniel Steele, in a very pathological story, "Bubbles," gives this description of one of his characters:

"Mrs. Kenyon, with long silky legs  
and an amount of pale-gold hair."

That's all—absolutely *all*—about Mrs. K., and one is left wondering whether the pale-gold hair was on the long legs and so rendered them "silky"—or what have you? One

almost has a suspicion that Steele and Lee must have been mooning, or *something*, together!

—G. H. C.

#### THE DOCTOR'S WIFE

Of all the women on earth known  
There's one to whom least mercy's shown.  
She's like the man behind the gun,  
Who never gets a bit of fun.  
Both night and day she's in the strife,  
No rest for her, the doctor's wife.

Some wives work hard throughout the day,  
While others while their time away,  
But even when the world's asleep—  
"Twould make the very angels weep—  
The telephone begins to ring  
And keeps on going, ding-ding-ding.

From bed she has to make a flight  
And leave the doctor sleeping tight;  
And then commits an awful sin—  
For when they ask if he is in  
She answers with a sleepy shout,  
"I'm sorry, but the doctor's out."

She hears the sleep disturber groan,  
"When will the doctor be at home?"  
"He went out early in the night,  
Will not return ere morning light.  
A lady over in New York  
Has had a visit from the stork."

The doctor's wife creeps back to bed,  
But once more lifts her sleepy head—  
The door bell rings, she jumps in fright  
To hear this messenger of night  
Inquire, "Is the doctor in?"  
And once more Madame sins a sin.

"I'm sorry, but the doctor's out,  
He left at nine o'clock, about;  
I'm sure his patient of tonight  
Will keep him until morning light."  
And the doctor's wife for sleep doth yearn  
As to her bed she doth return.

But now the phone bell rings again,  
Some patient has an awful pain.  
The doctor's wife calls through the phone,  
"The doctor's out, I'm all alone."  
Again the door-bell's loudly heard,  
Again her sleep must be deferred.

This time she'll to the window go  
And ask "What's wanted down below?"  
She knows quite well what they will say,  
That constant question night and day,  
And heard above life's noisy din—  
"I want the doctor—is he in?"

Again she answers with a sigh,  
Although the doctor's sleeping nigh,  
"He went out early in the night,  
Will not be home ere morning light."  
She shuts the window with a bang,  
And wishes sick folks would go hang.

At break of day the phone begins;  
The doctor's wife no longer sins,  
But answers "Yes, the doctor's here,  
What time do you think that you'll appear?  
Oh, he should call? What's your address?"  
The doctor wakes, his wife to bless.

Without her aid he'd have no rest;  
But how she helped no caller guessed.  
But when bells ring, she wished they'd stop  
Or she could fly to mountain's top,  
Where, calls for doctor no more heard,  
She'd be as free as any bird.

—MRS. H. P. VAYGHAN,  
Brooklyn, New York.

#### WONDERS OF MODERN SCIENCE

The eminent essayist from the city concluded his address on Basal Metabolism, before the county medical society, and as he was leaving the meeting place was warmly greeted by an elderly doctor who combed his luxuriant beard with one hand while he shook the visitor's hand with the other.

"I was right glad to hear your talk tonight, Doctor, and I agree with every word you said. When I was a boy 'twas nothing uncommon to find ten or twelve children in a family. Now they're doin' well if they have a couple. I tell yeh, Doctor, the basal metabolism of the young fellas today ain't what it was when we was boys."

#### HE HAD 'EM

Don't think that the U. S. A. is the only place where you have prohibition preached to you. Indeed not. In Scotland an old preacher was holding forth on this same subject, only he was making it more impressive by illustration. He had two glasses, one filled with water, the other with gin. He held up the glass of water, saying, "Dear friends, here we have *aqua-pura* and here in this other glass is gin." He took from his pocket a small box and drew forth

an angle worm. Dropping it into the water, he said, "See—see—how God's gentle creature swims about and enjoys the aqua-pura." Taking the worm from the water, he dropped it into the gin and it died. "Now," he said, "you see, my friends, what happens when God's gentle creatures come in contact with damnable gin."

An old man in the back row called out, "Parson, would you mind telling me where you got the gin?" To which the parson replied, "Certainly not, sir; at the den of iniquity around the corner."

"Thank you, parson, for I be troubled with them God's gentle creatures myself!"

#### WHOOPING COUGH

There is a reason, I suppose, for everything which comes—  
Why youngsters fall from apple trees and babies suck their thumbs;  
And though I can't explain it all, when trouble comes I know  
That since by providence 'tis willed, it must be wiser so.  
But knowing this, I still insist, we'd all be better off  
If little children could escape the dreaded whooping cough.  
Old women say it has to be, but I grow pale as death  
When I behold a boy or girl in anguish fight for breath.  
They tell me not to be alarmed, but I'm not made of steel,  
And every touch of agony the youngster has, I feel;  
And could I run this world of ours, the first thing I'd cut off  
From all the things which have to be, would be the whooping cough.

EDGAR A. GUEST,  
(Copy'r. St. Louis *Globe-Democrat.*)

#### CRUEL AND UNUSUAL

An Aurora newspaper calls attention to a nursing bottle advertisement which concludes with: "When the baby is done drinking, it should be unscrewed and laid in a cool place under a tap. If the baby does not thrive on fresh milk, it should be boiled." —Bottles.

# Thumbnail Therapeutics

## BISMUTH IN SYPHILIS

The contents of one ampule, containing O. 2 G. of potassium bismuth tartrate in a suspension of oil, together with a small amount of a local anesthetic, was injected intramuscularly once every 5 to 7 days.

This particular bismuth compound has been used since the inception of this form of treatment at the clinic. Its solubility and resultant better elimination, together with its high bismuth content (65.73 percent), render it of especial therapeutic value.

Each patient received either a minimum of 2.4 G. or a maximum of 3.0 G. of potassium bismuth tartrate.

Untoward reactions were noted with great rarity. The blue line on the gums is taken as a matter of course and is entirely disregarded unless stomatitis is present.—DR. JACOB L. GRUND, of Boston, in *Urol. and Cutan. Rev.*

## NUCLEIN

One of the best and most successful methods for stimulating phagocytic activity and general bodily resistance is by the administration of nuclein. The solution is the best form to use, and it may be given hypodermically or by mouth. If given by mouth it should be administered between meals. Cleanse the buccal cavity and drop it on the tongue, where it is readily absorbed. The dose is 3 to 20 drops, three or four times a day.—EDITORIAL in *Eclect. M. J.*

## CLEANING OUT EARS

Do not wash out or wipe out suppurating ears. If discharges must be removed, suck them out with some form of suction apparatus, or even with the mouth, using a glass tube having a piece of cotton in the outer end to prevent the secretions from going too far.—DR. JOSEPH BECK, of Chicago.

## IODINE IN RHINITIS AND PHARYNGITIS

A 1-percent solution of tincture of iodine, in glycerin, preferably combined with  $\frac{1}{4}$  of 1 percent of phenol, often acts very efficiently in the treatment of chronic rhinitis or pharyngitis and in suppurating adenoids. It is almost specific in postoperative infections after adenotonsillectomy, one swab-

bing of the throat frequently causing all symptoms to disappear as if by magic.—DR. SHEFFIELD, in *M. J. and Rec.*

## CHAULMOOGRA OIL IN TUBERCULOSIS

Chaulmoogra oil has been used for some time in the treatment of leprosy, with favorable results. It has been shown that it is 100 times more bactericidal, for acid-fast bacteria, than is phenol.

Lessner reports encouraging results in tuberculosis following the weekly intravenous injection (later extending the interval to 2, 3 or 4 weeks) of 1 cc. of the ethyl ester of Chaulmoogra oil.—DR. L. EICELBERGER, in *Bull. Chicago Tuberc. San.*

## NEUTRAL ACRIFLAVINE IN PROSTATITIS

In cases of prostatitis calling for the use of a urinary antiseptic, neutral acriflavine in  $\frac{1}{2}$  grain enteric-coated tablets, or urotropin (methenamin), in 15-grain doses, should be tried.—DR. H. W. E. WALThER, in *New Orleans M. & S. J.*

## PSYCHONEUROTICS

If a physician can keep a psychoneurotic patient under treatment long enough; rest him long enough; separate him from his family and all "sympathetic" friends long enough, the man (or woman) will get so much better that he will be astonished at himself.

To make these people better we must do something for them and make them understand why it is being done.—DR. JONES, in *Minnesota Med.*

## FLAT FEET

It is reported that stimulation of the muscles of the legs with sinusoidal electric currents is a valuable adjunct to other measures in the treatment of flat feet.

## ATROPINIZED CHARCOAL IN SPASTIC CONSTIPATION

Animal charcoal, containing 0.5 milligram (gr. 1/128) of atropine to a teaspoonful, has given excellent results in cases of spastic constipation. The dose of the atropinized charcoal is a teaspoonful, three times a day, reduced gradually to twice, then to once a

day, and, at last, one or two teaspoonfuls a week. The atropine is well tolerated.—  
DR. R. GOIFFON, in *Paris Médical*.

#### CLIMACTERIC DISTURBANCES

The "hot flashes," vertigo, nervousness and weakness which are present, to a greater or less degree, in all women at the menopause, can be relieved or almost entirely controlled by the administration of 5 grains of desiccated whole ovary, three times a day. Improvement is experienced, in 80 percent of the cases, in about a week, but the symptoms are not entirely controlled for a month or more. Smaller dosage produces less prompt and consistent results.—  
DRS. SHARLIT, CORSCADEN and LYLE, in *A. J. of Obst. and Gyn.*

#### CHOREA

Children with chorea should be kept out of school. Basham's mixture, 4 cc., and Fowler's solution, 5 minims, should be given after meals, *on alternate days*. Psychic assistance is frequently valuable.—DR. D. R. CLARK, of *Detroit*.

#### ACRIFLAVINE STAINS

Three percent hydrochloric acid in rubbing-alcohol is said to remove acriflavine stains from the hands in one minute.

#### INSOMNIA

Remember, you can get rest lying down, even though you sleep but little. Dogs sleep "with one eye open." Still they do not suffer from lack of rest. Why? Because a dog does not worry about it. Take a lesson from the dog and don't worry. And remember to imitate the cat by relaxing when you rest.—*Popular Health*.

#### EPINEPHRIN IN SUPRARENAL EXHAUSTION

The administration of epinephrin is to be restricted to the secondary stage of suprarenal exhaustion; it is contraindicated in the primary stage.—DRS. GREENWALD AND ELIASBERG, in the *Am. J. M. Sc.*

#### ACTION OF SODIUM IODIDE, INTRAVENOUSLY

So far as I have been able to determine, sodium iodide has only two primary actions: First, it stimulates all living protoplasm; second, it promotes a lysis and disintegration of all dead and dying protoplasm and all pathological exudates. Perhaps the apparent specificity of the iodine ion in these

actions is analogous to its action as an ingredient of thyrotoxin—the body's natural stimulator of metabolism. As a result of the second mentioned primary action of sodium iodide we get a sudden flood of split proteins and released bodies of dead bacteria entering the blood stream. It is these that act as antigen and stimulate amoebocyte elaboration. Increased osmotic pressure of the blood and lowered viscosity of the lymph may materially hasten absorption of these broken down proteins.—DR. JAMES W. WILTSIE, *Binghamton, N. Y.*

#### AROMATIC AMMONIA IN COLLAPSE

Aromatic spirit of ammonia, rubbed by means of gauze or cotton over the tongue of a collapsed and comatose patient, gives better reflex stimulation than the mere smelling of it.—*Pharmacal Advance*.

#### PROCAINE—BICARBONATE SOLUTIONS

By the addition of  $\frac{1}{2}$  to 1 percent of sodium or potassium bicarbonate to solutions of novocaine (procaine) that drug can be rendered almost as efficient as cocaine for surface anesthesia of the mucous membranes. This mixture has been little used clinically, but it is recommended that it be given a trial for mucous membrane anesthesia in the eye, nose, throat and urethra.

If the procaine is to be injected the addition of the alkali has little or no effect.—DR. W. R. MECKER, in *J. Lab. & Clin. Med.*

#### DIET IN HIGH BLOOD PRESSURE

We must always remember, as Robert Louis Stevenson said, that "it is better to travel happily than to arrive," and in many instances we can do so little for high blood-pressure from the standpoint of dietetics, except by advising moderation, that the patient is made wretched both mentally and physically by rigidly excluding customary articles from his diet.—SIR WILLIAM HALE-WHITE, of *London, Eng.*

#### THE VALUE OF BLOOD TRANSFUSION

Blood transfusion is only a "stop-gap" method in pernicious anemia, and its chief value is immediately after an exsanguinating hemorrhage from any cause. It has little or no value in shock unless the shock is the result of an acute hemorrhage; but the value of transfusion in new-born infants who are on the verge of death as the result of hemorrhage has been conclusively estab-

lished. In such a patient it is unnecessary to type the mother's blood, which can be taken at once and injected intravenously into the superior longitudinal sinus of the child.—DR. BALDWIN, in *A. J. of the Med Sc.*

#### MAGNESIUM SULPHATE IN ANESTHESIA

Those who have faith in the combination of morphine and magnesium sulphate lie under a delusion, and its employment to increase the efficiency of a general anesthetic also rests upon a fictitious basis. Careful investigation, using animals as tests, proves that such a synergism does not exist, and there is no satisfactory evidence to show that such an effect is produced in man.—DR. BECKMAN.

#### MYRINGOTOMY IN ACUTE OTITIS MEDIA

In general, myringotomy is not an operation for the general practitioner, unless he has had special training, as he may easily push the knife into the cochlea and set up a labyrinthitis.

It is better to puncture a hundred drums that do not need it than to neglect one that does. Incise the drum, freely, in the upper, posterior quadrant, and then let it alone.

The operation may be done under local anesthesia (pure phenol or other substance), or with nitrous oxide or ethylene.—DR. JOSEPH BECK, of Chicago.

#### BISMUTH IN NEGLECTED SYPHILIS

In old, neglected cases of syphilis or those which have been treated for years by the older methods it is not always possible to render the blood Wassermann-negative by the administration of bismuth, but all patients are clinically improved and in many the Wassermann test becomes permanently negative, even when this could not be accomplished by treatment with arsphenamine, mercury and the iodides.—DR. RAMOS, in *Med. Times*.

#### DANGER OF MERCUCROCHROME

The greatest objection to the intravenous use of mercurochrome is its toxicity. Severe reactions, marked by prostration, chills and dysentery, are common. Two of the 196 patients who received intravenous injections of mercurochrome at the Mayo Clinic during the past year died. It is evident, therefore, that mercurochrome should be used intravenously only if emergency demands

it.—DRS. BRAASCH AND BUMPUS, of the Mayo Clinic, in *J. of Urology*.

#### AMMONIUM CHLORIDE AS A URINARY ACIDIFIER

Ammonium chloride, in doses of 1.0 Gm., three times a day, causes a decided increase in normal urinary acidity, and also changes the reaction in cases of alkaline cystitis. Neither gastric disturbance nor mucoid expectoration are produced.—DR. MAURICE MUSCHAT, in *J. of Urology*.

[This is important because of the fact that hexamethylenamin (methenamin) can exercise its powerful antiseptic effects only in an acid urine.—Ed.]

#### IODINE IN HYPERTHYROIDISM

1.—Iodine should not be used as a cure for hyperthyroidism since recurrence always follows the early benefit.

2.—Iodine may be used to produce a temporary remission of toxicity during which operation is safer.

3.—Because of the brevity of the remission the iodine should not be given except as an immediate preoperative preparation.

4.—Because of the post-iodine reaction the discontinuance of iodine should not be allowed at any time before operation even if the patient is seen during the recurrence under iodine.

5.—Iodine should be continued after operation for about three weeks.—DR. PAUL STARR, in *Bul. Chicago M. S.*

#### PINCHED FINGERS

When a finger has been severely pinched, hold the hand up and rub it vigorously toward the elbow. Continue for several minutes. This will give quick relief from pain.—The *Health Messenger*.

#### ALKALIES IN SEASICKNESS

Seasickness is almost always accompanied by increased systemic acidity and acetonuria.

The high rectal injection of 1 dram (4.0 Gm.) of sodium citrate in a pint of water, repeated according to retention and results and supplemented by grape fruit, oranges and lemonade, by mouth, as soon as they can be retained, gives excellent results.

Doses of 30 grains (2.0 Gm.) of sodium citrate may be given every two or three hours, by mouth, as soon as the stomach will tolerate it.

As a prophylactic, it might be well to correct any hyperacidity before sailing.—  
B. SIDNEY JONES, Surgeon R.M.S. "Aquitania."

#### NONSPECIFIC PROTEIN IN PELVIC INFECTIONS

"1.—Except for evacuation and drainage, surgery has no place in the treatment of the acute stage of pelvic infection.

"2.—In the light of our present knowledge, operation should not be done in the subacute and chronic cases of pelvic infection until nature, aided by treatment with nonspecific protein, has had a chance to effect a cure.

"3.—Nonspecific protein therapy is a most valuable addition to the treatment of pelvic infections."—DR. JOHN A. MCGLINN, in *Therap. Gaz.*

#### MYOPIA

Myopia is always a pathologic condition and should be treated only by qualified members of the medical profession. Myopic children do much better if taught orally and by the blackboard, for this saves them the strain of constant convergence which is required for the reading of book print. The use of radio, the phonograph and moving pictures for the instruction of myopes is an unexplored field which offers large and interesting possibilities.—*Canad. M. A. J.*

#### PROPHYLACTIC BLOOD TRANSFUSION

The transfusion of 500 cc. of properly typed and matched blood is a valuable prophylactic measure to use before operations which are likely to be prolonged or attended with much loss of blood; also before less serious operations upon patients who are anemic or below par.—DR. GEORGE G. WOOD, in *Ill. M. J.*

#### X-RAYS IN HYPERTHYROIDISM

Between 60 and 70 percent of patients incapacitated by hyperthyroidism may be restored to a useful and moderately active life, and another 20 to 30 percent greatly benefited, by the proper application of x-rays.—DRS. BARCLAY AND FELLOWS, in the *Lancet*.

#### SULPHARSPHENAMINE IN RAT-BITE FEVER

In a case of rat-bite fever in a child two years old, the high fever was promptly reduced by intramuscular injections of sulpharsphenamine (0.1 Gm. at the first dose and 0.2 Gm. six days later), and the case went on to complete recovery. The other treatment of the case was symptomatic.—DR. C. F. NEWCOMB, of Champaign, Ill.

#### SODIUM THIOSULPHATE IN CORROSIVE SUBLIMATE POISONING

If bichloride of mercury has been taken by mouth, wash out the stomach until the poison is removed; introduce through the tube 15 Gm. of sodium thiosulphate in 480 cc. of water and leave it; give 0.3 Gm. of thiosulphate, in 10 cc. of water, intravenously.

Continue intravenous treatment for nine days, as follows: 0.45 Gm.; 0.6 Gm.; 0.9 Gm.; 1.2 Gm.; 1.8 Gm. Repeat this last dose for four days. The first two doses are given in 10 cc. and the rest in 20 cc. solution.—DR. R. E. JAMESON, in *M. J. & Rec.*

#### MANGANESE BUTYRATE IN GONORHEAL VULVITIS

Gonorrhreal vulvitis and bartholinitis, in the early stages, can often be aborted by two injections, of 1 cc. each, of manganese butyrate. These should be given intramuscularly, five days apart, first in one buttock and then in the other. This drug acts like a charm in the primary, inflammatory stage; the vulva clears up, the small, central abscess comes to the surface and discharges, and the septic condition quickly subsides.—DR. J. J. ABRAHAM, in the *Lancet*.

#### OTITIS MEDIA AND THE PRACTITIONER

The general practitioner, unless he is very sure of his landmarks and technic, had better let the drum rupture spontaneously, in cases of acute otitis media, than attempt to incise it in a poor light and with inadequate facilities.—DR. FRANK J. NOVAK, JR., of Chicago.

# Current Medical Literature

## SULPHARSPHENAMINE IN VINCENT'S ANGINA

The organic arsenicals have given good results in the treatment of Vincent's angina and stomatitis, but it is sometimes difficult to persuade these patients to submit to intravenous injections, and it is almost impossible to give them to children. In such cases Drs. Barenburg and Bloomberg report, in the *J. A. M. A.* for July 5, 1924, that intramuscular injections of sulpharsphenamine work well.

They sum up their experience with this drug, in Vincent's infections, as follows:

1.—Sulpharsphenamine is a specific for "fusospirillar" infections of the mouth and throat.

2.—One or two intramuscular injections usually cure.

3.—Intramuscular injection combined with local applications of sulpharsphenamine hastens this result.

4.—No local or general reactions were encountered after fifty-one injections.

5.—This mode of therapy is particularly suitable, as intravenous medication is difficult in children.

6.—It is of value in the treatment of pyorrhea.

## ETHER IN SUPPURATIVE OTITIS MEDIA

Chronic ear suppurations give physicians many anxious hours and most of the plans of treatment in vogue are highly unsatisfactory.

Dr. George B. McAuliffe, of New York, has treated seventy-five chronic suppurating ears with ether, with very pleasing results, the discharge ceasing in from two to ten days and the ears remaining clear. His work is reported in the *M. J. & Rec.* for April 21, 1926.

The technic consists in thoroughly cleansing the ear with boric acid solution, partially drying the canal and then, with the affected ear uppermost, filling the canal with ether and leaving it until it evaporates. As ether boils at 95°F., the patient experiences a sensation like that produced by hydrogen peroxide.

The doctor has had little or no experience in treating acute suppurations by this method, but has found that the best results are obtained where there are large perforations in the drum, permitting the ether to enter the tympanic cavity freely. He has found it also a useful diagnostic procedure, for in every case which has not cleared up promptly under this treatment the x-ray has shown mastoid involvement.

Dr. McAuliffe does not attempt to explain the rationale of the action of ether in these cases, but submits his findings solely upon

a clinical basis, referring to the successful use of ether, by some surgeons, in the bladder and peritoneal cavity, in the treatment of suppurative conditions.

## EPHEDRINE IN ASTHMA

Dr. William S. Thomas, of New York, has treated twenty asthmatic patients with ephedrine, given by mouth, and reports his results in some detail in the *A. M. J. M. Sc.* for May, 1926. He presents a table showing all important features of the cases, including the dosage and results of the ephedrine. The usual dose employed was 50 mgm. (slightly less than 1 grain), though he varied this to meet the conditions found.

After a study of these cases Dr. Thomas feels that the following conclusions are justified:

Ephedrine, administered by mouth to a series of twenty patients, suffering from asthma, has given relief to all but three and is an important substitute for epinephrin as a palliative remedy. In certain respects and in certain cases the newer drug is to be preferred.

In certain asthmatic patients for whom no means of permanent relief has been found, the drug has been used in regularly continued dosage, with the result of keeping them asthma-free during the period of its administration.

Its advantages over epinephrin include: (1) The fact that it is effectual when given by mouth; (2) the fact that its effects are more prolonged than those of epinephrin; (3) the absence, in most cases, of tremor and palpitation as by-effects of doses sufficient to relieve bronchospasm.

Among its disadvantages as compared with epinephrin are: (1) Its occasional failure to relieve asthmatic symptoms where the older drug does relieve. (2) By-effects, occasionally met with, which then render its use impracticable even though it relieve the bronchospasm. (It is possible that these ill-effects may be nullified by proper means.) (3) When given by mouth, its effects are, of course, less rapidly produced than are those of epinephrin given hypodermically. Ephedrine, however, may also be given subcutaneously. (4) Delay in obtaining ephedrine is unavoidable at present.

A field for the use of ephedrine appears to lie in its employment as often as is necessary to prevent the occurrence of paroxysms in asthmatic patients that are awaiting the completion of skin tests, courses of vaccine administration, rhinologic treatment, radiotherapy or other methods from which more permanent benefit is hoped. When effectual, its use in these preventive doses has been more satisfactory than the treatment of paroxysms by injections of epinephrin.

Whether the long-continued administration of this drug to particular patients will prove to be harmful to them or not, is not known at present.

### ISACEN

Isacen (diacetil-dioxyphenyl-isatin) is a new purgative substance, synthesized by Guggenheim (*Schweiz. med. Wochenschr.*, 55: 16, June 1, 1925). It is said to be effective in small doses, tablets containing 5 mg. (1/13 grain) being the suggested laxative dosage, repeated if necessary or if a cathartic action is desired.

Isacen is insoluble in water. It is said to be eliminated entirely in the feces, and not to reach the liver or kidney. It is believed to be nontoxic, and passes through the stomach unchanged.

Ordinarily, isacen does not produce undesirable side effects.

This new drug is also described in an article by Drs. Max Einhorn and H. A. Rafsky in the *J. A. M. A.* for June 5, 1926.

E. H. V.

### DANGER FROM USE OF IODIZED SALT

Many families have taken to using iodized salt regularly in the family cooking, under the impression that it was a perfectly harmless method for preventing the development of goiter. That it is not such an innocuous practice as was at first supposed is indicated by an article in the *J. A. M. A.* for May 1, 1926, in which Dr. C. L. Hartsock, of Cleveland, reviews the findings in the cases of 16 men who developed hyperthyroid symptoms, apparently as a direct result of the use of iodized salt in their food.

In this article the findings are tabulated and the attendant circumstances carefully considered.

Hartsock believes that the periodical administration of iodine to children, before puberty, is a valuable protection against the development of goiter, but that after that age iodine should not be given except after a careful study of the condition of the thyroid in each individual case. The danger of causing an exacerbation of a thyroid adenoma far overbalances the possible prophylactic value of iodized salt in the prevention of other forms of goiter.

### TREATMENT OF ACUTE BACTERIAL CYSTITIS

In an interesting paper by Dr. N. Blaustein, of New York, in the *J. Urology* for April, 1926, he sums up the results of his studies of the treatment of primary, acute, bacterial cystitis, as follows:

1.—In acute cystitis identify and recover the organism for the purpose of preparing a vaccine. Such vaccine acts best in the acid types of cystitis; T. B. excluded.

2.—Prompt change of the reaction of the urine as soon as diagnosis is established; then change again.

3.—Calcium chloride and ammonium chloride are the best acidifiers of urine in alkaline cystitis.

4.—Sodium bicarbonate is the best alkalinizer of urine in acid cystitis, and possesses slight diuretic and antiseptic properties.

5.—Avoid instrumentation when the acute symptoms supervene; likewise instillations.

6.—Use diathermy for the post-infectious "irritable bladder."

7.—Give urotropin (methenamin) intravenously to avoid gastric irritation; it is the best antiseptic.

8.—Avoid forced diuresis during the antiseptic period.

9.—Moderate elevation of pelvis will lessen frequency of urination.

10.—Guard against chilling of the body.

11.—Avoid purging the patient; it causes congestion and aggravates the tenesmus.

### VENESECTION IN CARDIAC DECOMPENSATION

The decompensating heart can sometimes function reasonably well when moderately dilated, but breaks down if dilatation is excessive.

Dr. B. Gordon reports, in the *Am. J. M. Sc.* for November, 1925, that, when x-ray examination shows the heart to be considerably dilated, prompt relief of the urgent symptoms follows venesection in cases where this procedure causes an immediate diminution in the size of the heart. Where the heart does not decrease in size there is probably a serious impairment of the myocardium and venesection gives little or no relief.

### TARTAR EMETIC INTRAVENOUSLY IN HEMOPTYSIS

In *La Semana Medica* (Buenos Aires) for January 7, 1926, Dr. Orlando P. Curti makes an interesting discussion of the treatment of hemoptysis, occurring in cases of pulmonary tuberculosis and in paragonimiasis.

The doctor was at first skeptical as to probable results but has been using intravenous injections of antimony and potassium tartrate since 1922 and is now convinced that it has a pronounced hemostatic effect in pulmonary hemorrhages. He still feels, however, that it is an emergency remedy and should be used only after all other therapeutic measures have failed, because the cases in which it is used are generally much debilitated and show arterial hypotension, so that the effects of the remedy sometimes give cause for serious uneasiness; and because of its deleterious effect upon the liver.

The tartrate is prepared as a 1-percent solution in isotonic salt solution and sterilized by passage through a Berkefeld filter or by boiling, but never in an autoclave, as the high temperature breaks up the double salt into its elements.

He has seen a dose of 0.05 Gram of tartar emetic, intravenously, stop pulmonary hem-

orrhage after calcium chloride, intravenously, emetine and even opium had failed.

The administration of this remedy is accompanied by nausea and sometimes vomiting, a considerable fall in the blood pressure and bradycardia of such a degree that the pulse sometimes falls to 10 beats a minute, and the occurrence of these symptoms, together with the decided hepatic insufficiency which is often observed, make its use as a routine measure inadvisable.

The mechanism of the pulmonary hemostatic action of tartar emetic is an interesting question which is not fully settled, but the symptoms mentioned are those of a disturbance of the autonomic nervous mechanism.

#### NURSES

In an address by Dr. Hobart Amory Hare to the graduating class of the Training School of Lankinau Hospital, reported in the *A. M. A. Bulletin* for June, 1926, he states his belief in the need for a large number of intelligent and sympathetic women who have had from six months to a year of training and who would be as well able to take care of the vast majority of cases of illness as is the average R. N., and at a price within the means of ordinary people.

There is, and always will be, a need for supertrained women for certain special kinds of work and special positions, but to feel that every woman who is going to care for the sick needs such training is like expecting every clerk in a store or bank to have the training of a certified accountant.

Moreover, there is creeping into the nursing profession a spirit of trade unionism which is wholly incompatible with the professional attitude and which is making many nurses wholly impossible, in a variety of ways, in the average family.

#### DIFFERENTIAL DIAGNOSIS OF UPPER GASTROINTESTINAL LESIONS

Dr. Roscoe R. Graham, of Toronto, Can., calls attention, in the *Canad. M. A. J.* for May, 1926, to the fact that, though patients with disease in the upper part of the digestive tract always say they have "stomach trouble," as a matter of fact, less than 10 percent of these people actually have lesions in the stomach. A clinical diagnosis in these cases must localize the lesion in the stomach, duodenum or biliary tract.

Dr. Graham sums up his very excellent paper by saying:

"To arrive at a differential diagnosis of diseases involving the upper gastrointestinal tract, one must appreciate that all symptoms are the result of irregular normal gastrointestinal motions; that altered secretion which may be present in disease is so inconstantly altered as to be of no value; that this alteration in secretion is just as likely to be the result, as the cause of the disease process."

The interpretation of the various symptoms is based on a knowledge of normal

physiological processes in health. The localization and the extent of the pathological conditions present are determined by the character of the life history of the disease process. Where the lesion is the result of a mechanical interference with function, or the result of a reflex disturbance from an organ which does not spontaneously recover, such as the gallbladder, there is a continuous history of a disability which is not characterized by any remissions, but may be characterized by exacerbations of a more severe disability. On the other hand, if the disease process changes insofar as the gross pathological picture is concerned, then we can have a similar change in life history. For instance, in duodenal ulcer, because of the fact that the ulcer heals over and subsequently breaks down, we have that recurrent type of indigestion extending over even twenty or thirty years, characterized by periods of extreme well-being between the attacks of indigestion. Further, because inflammatory processes are superimposed upon a chronic lesion, there is again a continuity of symptoms, as well as symptoms which may previously have been closely related to time of day, or to the ingestion of food.

In gastric ulcers, particularly in the periods of remission, but as the ulcerative process extends and involves surrounding structures in a peri-gastric inflammation, there is continuous disability. Therefore *symptoms*—their relationship to the ingestion of food and their relationship to the time of day, and their relationship to each other throughout the life history of the disease, must form a fundamental groundwork upon which to build up the clinical differential diagnosis of upper gastrointestinal lesions."

#### AVIAN TUBERCULOSIS

The importance of bovine tuberculosis is now well understood by everyone, and most people realize that hogs also contract this disease and may become a menace to man.

In the *Chicago Tribune* for April 20, 1926, Dr. W. A. Evans called attention to the fact that recent investigations have shown that from 40 to 85 percent of the cases of tuberculosis now found in hogs is due, not to the bovine type of bacillus but to the avian type, and that the infection has come from hens, sparrows or pigeons suffering from the disease.

In the *Journal-Lancet* for May 15, 1926, Dr. J. Arthur Myers, of Minneapolis, states that the birds most commonly affected with tuberculosis are those which are more or less domesticated or in captivity, including the hen, the English sparrow, the turkey, the peafowl, the parrot, the canary, the pigeon and the guinea fowl. The avian type of the bacillus has been isolated from tuberculous lesions in mammals, including man, and is therefore of importance to physicians and must be remembered as a possibility in dealing with tuberculous infections.

In the *Southern M. J.* for January, 1926, Drs. Charles H. Mayo and William A. Hendricks, of Rochester, Minn., report two

cases of avian tuberculosis affecting the liver and spleen in human beings. In one case the mesenteric lymph glands were also enlarged.

These authors also quote a case reported by von Kurt Lederer, in which the patient showed a marked polycythemia (the red cells were counted as high as 9,720,000). At autopsy, not only the liver and spleen, but also the lungs and kidneys were found to be heavily infected with avian tubercle bacilli.

### CHRONIC APPENDICITIS

Dr. Arthur E. Hertzler believes that there is no definite pathological basis for a diagnosis of chronic appendicitis, and that such a diagnosis frequently leads to unnecessary operations.

In the *A. J. of Obst. and Gynec.* for February, 1926, he analyzes the records of 2,000 patients who had pain and tenderness in the region of the appendix, some of whom were operated upon, and divides them into four classes, as follows:

1.—Cases in which the removal of the appendix was followed by relief of the pains formerly complained of.

2.—Cases in which the pains persisted or returned after an interval of freedom, after the removal of the appendix.

3.—Cases in which the error in diagnosis became obvious later on.

4.—Cases in which the groin pains were relieved without molesting the appendix.

In Class 1, which are the so-called "cures" in chronic appendicitis, he believes it is the general experience that almost any sort of an operation will relieve almost anything for a time.

In Class 2, the symptoms, relieved at first by operation, later return. This is true particularly in dysmenorrheic young women.

In Class 3, the same symptoms do not return but others develop, which with the normal appendix in hand, he believes is sufficient evidence to prove the error of the first diagnosis. Many of these cases prove to be kidney stones and gall-stones.

In Class 4, the relief of the chronic appendicitis symptoms without molesting the appendix, can be accomplished by searching out the actual cause and removing it. Many of these cases will be found to be due to such conditions as ovarian dysfunction, seminal vesiculitis, diseases of the genito-urinary tract, pyelitis, gall-stones, spastic constipation and many others.

### REMOVING FOREIGN BODIES FROM THE CORNEA BY SUCTION

Many physicians have available some apparatus for producing negative pressure (suction). The simplest and least expensive of these is a small device which is attached to the water faucet.

Where such a device is available, Dr. Sidney Israel, writing in the *Am. J. of Ophth.* for April, 1926, recommends its use in removing foreign bodies from the cornea.

A small glass tube, shaped like a medicine dropper, is attached to the suction tube and applied to the foreign body, the amount of suction being controlled by pressure on the rubber tube. This method is quick, simple and free from danger.

### CHEESE BREAD

So many people are eating out of lunch boxes and dinner pails these days, that the sandwich is becoming a wellnigh universal article of diet, and anything that will add to its possible variety is a boon.

A. L. Rumsey, writing in *Baking Technology* for June 15, 1926, describes a new variety of bread in which cheese is incorporated, so that it is already a sandwich, or the equivalent of one.

The formula for this new bread is:

Wheat flour.....	100 parts
Powdered, dehydrated cheese	20 "
Water (as required) about....	64 "
Yeast.....	2.5 "
Salt.....	1.9 "
Sugar.....	4.0 "

No other shortening than the cheese is needed. It takes this bread considerably longer to rise than it does the ordinary kind.

This new bread is particularly recommended for making toast, and especially for use in salad sandwiches.

### CLASSIFICATION OF DIARRHEAS

The hot days of summer and early fall, with the various indiscretions of eating and living which accompany them, bring a large number of cases of diarrhea. The treatment of these cases depends for its success upon a proper understanding of the cause.

In the *Canad. M. A. J.* for May, 1926, Dr. R. D. Rudolph, of the University of Toronto, contributes a thoughtful discussion of diarrheas. He divides the alimentary canal, clinically, into three parts: (1) The stomach and duodenum; (2) The small bowel and the upper part of the colon; and (3) The lower colon and rectum. When the disturbance is in the upper part the symptoms will be chiefly gastric—nausea, vomiting, epigastric distress and sometimes diarrhea; when the middle portion is involved there will be much colic but no tenesmus and the stools will be large and well-mixed; when the trouble is lower down the stools will be small and frequent, mixed with blood and mucus, and there will be much tenesmus but little or no colic. It is important to recognize these varieties, though there is frequently a combination of symptoms when more than one portion is involved.

As to the cause, he recognizes three groups: Nervous, where there is no organic disease and the fault is in nerve control ("Church diarrhea"); purgative, where the looseness is due to some irritating substance or purgative medicine, ingested or elaborated within the alimentary tract; and organic, where some pathological change in

the mucous membrane of the bowel is present, as in typhoid, dysentery, intestinal neoplasms, etc.

The treatment of the nervous diarrheas should be by nerve sedatives, as the bromides, adding belladonna if colic is present. The purgative diarrheas, caused by irritating substances formed in the bowel call for the prompt removal of these substances, and the best remedy for this purpose is castor oil. Patients with organic diarrhea require rest (generally in bed), warmth, restricted diet and, frequently, local treatment to the diseased area. In giving soothing and astringent enemas, there is no need to try to pass a tube far up into the colon. Solutions introduced through a four-inch nozzle will reach the cecum if the patient is in the knee-chest or Sims position.

If we study our cases of diarrhea more carefully our failures in curing them will be fewer.

#### "COLDS" AND INFLUENZA

Dr. Thomas F. Reilly, of New York, believes that "common colds," "la grippe" and "influenza" are merely convenient names for designating various degrees of severity of the same disease and he sets forth his reasons for this belief in an interesting article in the *Med. Times* for May, 1926.

Dr. Reilly states that the diagnostic signs of both "colds" and influenza are:

- 1.—Congestion of the external limbs of the conjunctive.
- 2.—Red lips—resembling the rouged lips of the present day.
- 3.—Redness of one or both nares.
- 4.—Redness of the anterior palatal arches sometimes extending half way up, or again forming a complete arch.
- 5.—Blood on a swab that has been put up behind the uvula.
- 6.—Red papules and redness of the uvula.
- 7.—A sago-grain-like eruption in the soft palate, seen best by reflected light.
- 8.—Hemorrhages in the sides of the mouth and soft palate, indistinguishable from the appearance following a recent smoke.
- 9.—Stenson's duct phenomenon.

The latter phenomena consists in a marked elevation of the opening of Stenson's duct, just opposite to the second superior molar teeth, with a deeply stained puncta, often resembling a hole such as might be made by a needle prick. It is present in about 70 percent of the head-cold patients and it is also seen in some patients suffering from mumps. It is seldom present in those who have lost their upper back teeth.

He feels that this condition which he calls, "The Great Mucous Membrane Disease," has a strong tendency to recur at periodic intervals, in patients who are once infected, and that in cases where attacks are frequent or symptoms continuous we will find foci of infection, a lack of immunity or a history of exposure to cold, wet or some other devitalizing agency.

The article discusses the subject rather completely and sums up the conclusions as follows:

- 1.—We believe that influenza and the common head cold are the same phenomena.
- 2.—That an indefinite period of incubation occurs in every attack which may be days or weeks before manifesting itself as observable pathological phenomena.
- 3.—That certain mucous membrane signs characterize the attack as the great mucous membrane disease.
- 4.—That recurrence at sixteen or thirty-two week intervals is the rule.
- 5.—That the disease consists of a number of short attacks, the total lasting from six to eight weeks, rarely more.
- 6.—That each of the short attacks lasts three and a half days.
- 7.—That the disease once acquired generally remains in the individual's mucous membranes for many years.
- 8.—That the onset is not always confined to the respiratory tract.
- 9.—That a person may act as a carrier for years.
- 10.—That influenza often acts as a herald for many socalled disease syndromes.

#### DRINKING WATER WITH MEALS

Most of us have believed and taught, at one time or another, that the drinking of water with meals was injurious.

In the *J. Florida M. A.* for November, 1925, Dr. George M. Niles explains the fallacy of this idea, so far as it concerns people with normal stomachs, and excluding, of course, the drinking of large quantities of ice-water with meals, which is always injurious.

Experiments with young, healthy men showed that those who drank no water with their meals, and as little as possible at other times, lost weight and had headache and constipation; while those who drank a quart of water with each meal, as well as considerable quantities between meals, gained weight and were in excellent condition, with no signs of indigestion.

Patients with gastroparesis or dilated and atonic stomachs and those with weak hearts and uncompensated valvular lesions should drink little or no water with meals.

#### EPINEPHRIN IN SUPPRESSION OF URINE

One of the most serious complications which confronts the internist, the surgeon and the obstetrician is suppression of the urine. To pass a catheter on a patient who has not urinated for a number of hours, and find the bladder dry, is a very distressing experience.

Dr. J. S. Lankford, of San Antonio, Tex., noticed that in cases where the kidney function was suspended, for any reason, there was profound depression, low blood pressure, low temperature and the vital powers in general were at a low ebb.

In considering a remedy to counteract this condition of asthenia, he thought of epinephrin as being a powerful vital incitant and, so he reports in the *Am. Physician* for April, 1926, he felt that the stimulation of the vital functions might restore kidney function which had been lost for want of sufficient tonus in the cardiovascular system. Experiment proved this position to be well taken.

Dr. Lankford gives an initial dose of 20 to 25 minims of epinephrin solution [presumably by hypodermic injection, as the drug seems to be inert by mouth.—ED.] and follows this, at intervals of  $\frac{1}{2}$  to 1 hour, according to conditions, with similar doses until results are obtained. Two to four doses are usually sufficient to restore the kidney function.

The doctor has used this treatment successfully in thirteen cases of suppression from various causes, including rattlesnake bite and puerperal eclampsia. In two cases of anuria due to poisoning with bichloride of mercury it has failed entirely, probably because there was actual destruction of the kidney substance.

This procedure seems well worth trying in such cases where there is little enough that the physician can do to save a patient who is in a very critical condition.

#### CALCIUM GUAIACOL SULPHONATE INTRAVENOUSLY IN PULMO- NARY TUBERCULOSIS

Dr. Rodolfo Alvarez Boettiger reports at length, in the June, 1925, number of the *Revista de Ciencias Medicas* the clinical trial carried on with calcium guaiacol sulphonate, intravenously, in a series of twenty cases of pulmonary tuberculosis at San Fernando Hospital, Tlalpan.

The value of calcium administration consists not only in supplying the necessary lime salts in the human organism, but in opposing all calcium losses. The therapeutic effect of guaiacol, on the other hand, has been variously ascribed to its antipyretic, analgesic, germicidal stimulating and, more recently, to its antioxidative properties.

Thus the combination of these two remedies, which had been found insufficient when administered simply or jointly, by the oral, local or subcutaneous methods, seemed theoretically to be warranted, in the form of calcium guaiacol sulphonate; and according to Boettiger its clinical value has been satisfactorily demonstrated.

The injections in the present series were administered in doses of 20 cc., the majority covering a period of forty consecutive days; other subjects were given two series of thirty and forty injections each, with intervals of from ten to fifteen days between series. No pain, local reaction or intolerance were observed as a result of the injection in any of the cases, other than a salty taste and dryness in the throat during the process of administration. Results on the whole were most encouraging and include the following features: increased appetite, disappearance of thoracic pain and

a favorable influence on cough and sputum characteristics. Bacteriological tests of the sputum in the majority of cases confirmed the progressive decrease in the number of bacteria in each field, while complete disappearance of the tubercle bacilli was noted in others.

In the majority of advanced cases the afflicted zones decreased in extension and the stethoscopic phenomena in intensity, while in the slightly advanced cases both of these conditions cleared up completely. These findings were confirmed by radiologic examination. The weight of the patients was favorably influenced in about one-half of the cases; the temperature, however, less frequently.

As a result of these observations, Boettiger concludes that in the intravenous injection of calcium guaiacol sulphonate has been found a means by which the lesions in the more advanced cases of pulmonary tuberculosis may be favorably influenced provided there are no gastrointestinal or laryngeal complications; in incipient cases, he believes, a cure may be anticipated as a result of this treatment.

#### KIDNEY DISEASE

In the *J. Mich. S. M. S.* for September, 1925, Drs. W. F. Martin and W. N. Chynoweth, of Battle Creek, Mich, call attention to the facts that, in many cases of kidney disease, especially ureteral stricture and hydronephrosis, the symptoms are all or chiefly referred to the abdomen; while cases characterized by pain in the back—often spoken of by the laity as "pain in the kidneys"—are rarely due to renal disease, but mostly to osteoarthritis, sacroiliac strain, pelvic disorders and the like.

They show that we need never be in the dark regarding the condition of the kidneys, for a competent urologist can clear up the diagnosis; and they plead for a cystoscopic examination:

- 1.—In every case of obscure abdominal pain not otherwise positively explained.
- 2.—In all cases with a history of hematuria.
- 3.—In every case showing blood, pus or albumin in the urine.
- 4.—In all cases of doubtful abdominal tumors.

#### TRYPARSAMIDE IN NEUROSYPHILIS

In the *M. J. and Rec.* for March 3, 1926, Drs. Paul A. O'Leary and S. William Becker, of the Mayo Clinic, report the results following the use of tryparsamide in 207 cases of neurosyphilis (113 of which have received two full courses—twenty injections —of the drug and have been observed for three years).

The tryparsamide was given intravenously, in doses of from 1 to 3 Gm. (40 to 50 mgm. per kilo of body weight) at weekly intervals. Several other drugs were used in conjunction with the tryparsamide, but best results were obtained by giving 0.2 Gm.

of potassium bismuth tartrate with butyn, intramuscularly, every five days.

In summing up the results of their studies, these clinicians state:

"The use of tryparsamide at the Mayo Clinic extending over a period of three years, in 207 cases, leads us to believe that, although its use is still in the experimental phase, tryparsamide is of value in the treatment of the paretic type of parenchymatous neurosyphilis. It does not seem to offer as much encouragement as the treatment of general paresis with malaria but it is available for those not suited to the risk of the latter treatment. Our evidence, based on subjective and serological improvement, justifies the assertion that there is a certain small group of patients with early paresis who derive marked benefit from tryparsamide. In seven cases in the whole series there was a complete reversal of the spinal fluid findings to normal but no associated clinical improvement. We were unable to ascertain the clinical and serological criteria by which to determine beforehand the patients with paresis who will improve.

"The objective visual complications offer a hazard (4.3 percent) which could not be prevented by special precautions. The mechanism of this complication has not as yet been described. The use of bismuth intramuscularly in conjunction with tryparsamide seems to offer better therapeutic results than either given alone. The low cost, availability, and small percentage of complications and reactions are among the advantages of the drug.

"The continued clinical use of tryparsamide may eventually determine the niche in the armamentarium of neurosyphilitic treatment in which it is to fit with the most encouraging results, but until that time its use is warranted as a valuable adjunct in the treatment of the patient early in the course of general paresis."

#### OUTLINING THE HEART

The x-ray is, of course, the best method for determining the size and position of the heart, but it is not always available to all practitioners. Dr. J. S. Lankford, of San Antonio, Tex., described an interesting procedure for outlining the heart, in *Am. Med.* for November, 1925.

Dr. Lankford uses Cammann's metal stethoscope and, for a plexor, an ordinary, rubber-tipped lead pencil.

The metal stethoscope is pressed against the middle of the sternum with reasonable pressure, between the second ribs, and percussion is made by a series of rather firm, quick strokes, about four to the second, beginning two or three inches outside the supposed borderline of the heart. Immediately upon approaching the line the percussion note becomes dull or flat. A mark is made and the procedure is repeated on the other side. The stethoscope is then moved down an inch or more and the border found and marked, and so on down to the lower border of the heart. Quickly the pencil marks are converted into a continuous line and the outline is complete. The female breast of whatever thickness does not interfere with the test. If there is any suspicion about liver dullness complicating the test, percussion from above downward and from below upward inside the nipple line will reveal the liver border. It should be remembered also that enlargement of the spleen and effusion may complicate matters.

Pericardial effusion may easily be outlined by this same plan, but pleuritic effusion cannot because it is usually too far from the sounding board. In the ordinary average chest the ribs and interspaces may be disregarded. If the chest is very bony it is well to keep to the interspaces, or, if the bone is followed, to make allowance for the difference in the percussion note. Vibration is readily carried along the ribs to the sternum and thus to the stethoscope, but the percussion note is different. The skin does not vibrate well when stretched tight over the bone.

After some experience it is easy enough to find the depth of pressure or force required, the quickness of release of the skin from pressure, and the rapidity of strokes to get the best results.

Extensive consolidation of lung tissue, pleuritic effusion, mediastinal tumor, and other abnormalities may so mask the conditions that the x-ray may be imperative; and yet since this plan was adopted one case of dextrocardia was readily recognized. The dilated aorta or aneurism can thus be outlined. A number of efforts have been made to use this plan in outlining other organs, but it has been found impracticable on account of the absence of the excellent sounding board, the sternum. This method has been so extremely useful the last twelve or thirteen years that it seems a distinct advance worth reporting.

# New Books

## D'HERELLE: THE BACTERIOPHAGE

THE BACTERIOPHAGE AND ITS BEHAVIOR.  
By F. D'Herelle, M.D. Translated by George H. Smith, Ph.D. Baltimore: The Williams and Wilkins Company. 1926. Price \$8.00.

Preparation of this work began as a revision of "The Bacteriophage: Its Role in Immunity." The wealth of new material, however, rendered revision impractical, and although the new book necessarily incorporates the former material, it is a new and extended treatment of the subject, not simply a restatement of previously published data.

An important addition is that of drawings which show methods for effecting ultrafiltration, and illustrating the proper assembly of apparatus. These illustrations will naturally be of prime assistance in indicating proper technic.

A chapter on terminology devoted to a careful explanation of the distinguishing terms used is particularly helpful in making the text free from ambiguity or misunderstanding. There is a chapter also on technical procedures, for the use of those engaged in experimental laboratory work.

The author reviews the work done in bacteriophagy, not only by himself but by others, noting its failures as a therapeutic agent as well as its successes. That there have been failures is inevitable. Imperfect technic or imperfect understanding of a new agent would account for many, if there were no other causes. What may be called the clinical chapters are of especial interest to the practicing physician. For many diseases and infections—dysentery, typhoid, intestinal disturbances, infected wounds, staphylococcus and streptococcus infections, plague—the action of the agent has been found potent and rapid. In the case of infected wounds, bacteriophage treatment is being used by a number of hospitals, those in charge feeling that it has become an established procedure.

The behavior of the bacteriophage in disease, the author says, varies according to: (a) conditions in the intestine, and (b) hereditary characters of the race of bacteriophage and of the strain of bacteria involved:

A. In all conditions favoring the bacteriophage, its acquisition of its virulence is immediate, the result being the elimination of the bacterium before it can develop.

B. Under less favorable conditions, bacteriophagy takes place after a latent period. The result is a few mild symptoms, then the clearing up of the disorder. The disease is aborted.

C. When the virulence of the bacteriophage is built up only after considerable delay, the result is a progress of the disease to a point, then a gradual repression, and convalescence of the patient.

D. When the virulence of the bacteriophage develops very slowly, or when the bacteria at the time of invasion have an acquired resistance a struggle ensues, the patient's condition reflecting the ups and downs. The outcome is in doubt.

E. When the bacteriophage remains wholly inert, the result is the unhindered development of the bacteria and the death of the patient.

The new book is in three parts, with an introduction consisting of chapters on history and on terminology and technic. Part I deals with the phenomenon of bacteriophagy; Part II with the behavior and nature of the bacteriophage; Part III with the antigenic properties of the bacteriophage protoe and its behavior in disease and in epidemics; and specific therapy—virtually a clinical section.

It should be particularly noted that the material is, for the most part, entirely new, and not hitherto published in any language. Dr. Smith made the translation from manuscript sheets. Furthermore, it embraces a review of all important work done in bacteriophagy by anyone.

A bibliography of 647 references is appended.

We feel that every physician should read this book, as it seems decidedly probable that the material it contains may be of epoch-making significance. Biological laboratory workers will need it for frequent reference. Clinicians should study the introduction and the clinical section very carefully. Everybody concerned with the advancement of medical science should have a working and thinking knowledge of what is being done in this field.

## HEATHERLEY: HEART DISEASE

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF HEART DISEASE. By Francis Heatherley, M.B., B.S. (Lond.), F.R.C.S. Second Edition. New York: William Wood & Company. 1926. Price \$3.75.

It may be that the great increase in the prevalence of heart disease in the last score of years has stimulated research along this line. Certain it is that our ideas on this subject have—or should have—undergone profound modifications as a result of recent studies of heart function. The old idea that heart disease consisted chiefly of leaking valves, and that "decompensation" was wholly a question of hydrostatics and hydrodynamics, has given place to the newer teaching that heart failure depends upon a damaged heart muscle and disturbed innervation; while valvular lesions are of secondary importance.

In this excellent little book, intended especially for general practitioners, the author has set forth the newer ideas regarding heart disease, in the pleasing, colloquial

style of a teacher talking to a small class of students. He deals with Abnormalities of the Heart Beat, Heart Failure, Angina Pectoris and Blood Pressure. Following this he discusses the diagnostic importance of symptoms and signs, and also the questions of prognosis and treatment. In an appendix he gives hints to cardiopathic patients and a list of interesting books.

Dr. Heatherley has taken most of the mystery out of auricular fibrillation, extra systoles, heart block and other conditions not well understood by most practitioners, and has done it without cluttering up the pages with electrocardiograms and such things which are fully appreciated only by expert cardiologists.

Here is another medical treatise which can, with interest and profit, be read straight through, like a novel, and then re-read from time to time. The writer disclaims all idea of writing a textbook; but he has given us something better, in many respects, than a textbook. Any man who will read this book carefully will know more about the heart than he did before; and if he will reread it several times, giving it his whole attention, he will be able to handle many cases of cardiac abnormalities which were formerly entirely beyond his professional skill.

#### MAYO AND PLUMMER: THYROID GLAND

**THE THYROID GLAND.** By Professor Charles H. Mayo and Professor Henry W. Plummer. Beaumont Foundation Annual Lecture Course IV. St. Louis: The C. V. Mosby Co. Price \$1.75.

These are the Beaumont Foundation Lectures for 1925, given under the auspices of the Wayne County (Mich.) Medical Society.

Dr. Mayo's lecture deals with the thyroid gland in general, giving the history of goiter, the anatomy, physiology and biologic chemistry of the thyroid and statistics relative to the prevalence and distribution of goiter.

Dr. Plummer's lecture considers the function of the thyroid, the classification of goiter and the mechanism and symptoms of hyperthyroid states.

A brief and authoritative contribution to the study of a prevalent condition.

#### DANA: MEDICAL HISTORY

**THE PEAKS OF MEDICAL HISTORY. AN OUTLINE OF THE EVOLUTION OF MEDICINE FOR THE USE OF MEDICAL STUDENTS AND PRACTITIONERS.** By Charles L. Dana, A.M., M.D., LL.D. Illustrated. New York: Paul B. Hoeber, Inc. 1926. Price \$3.00.

Every physician ought to know at least the outlines of the history of his profession, and here he can get the "high spots," from pre-Hippocratic times down to the middle of the 19th century, in a form which is very easy to take.

This is a good, well-made little book, written in a pleasing, narrative style and illustrated with an excellent collection of plates

and text cuts which make the subject vivid and entertaining.

Those who have no history of medicine would do well to buy this, as it will give them the minimum that every physician ought to know about the earlier days of the profession. Those who already are interested in the subject will buy it, anyway, because it is a lively and well-illustrated volume for handy reference or occasional perusal.

#### HUDDLESON: DIABETIC DIET

**FOOD FOR THE DIABETIC.** By Mary Pascoe Huddleson, Consulting Dietitian, With an Introduction by Nellie Barnes Foster, M.D., Assistant Professor of Medicine at Cornell University Medical School and Associate Physician, New York Hospital. Second Edition Revised. New York: The MacMillan Company. 1926. Price, \$1.25.

This little volume truly achieves its purpose, viz: "To give diabetic patients briefly and in simple language the information regarding their disease, from a dietetic standpoint, that is necessary in order to carry out their physician's directions." Such fundamental considerations as the nature of the disease, the use and effect of foods in the body, and the conditions a dietetic treatment of diabetes endeavors to produce are lucidly explained and with sufficient brevity. The role of insulin is considered and directions for its use are given.

The preparation of the food prescriptions, measurement, and menu planning are followed without difficulty, while the many tasty recipes offer ample variety.

H. C. S.

#### KRISHNAMURTI: HOW TO LIVE WELL

**AT THE FEET OF THE MASTER.** By J. Krishnamurti. Chicago: The Theosophical Press, 826 Oakdale Avenue. Price, paper 25 cents; cloth 60 cents; fabrikoid \$1.50.

The author of this little book has come into such wide notice during the past few months that it should be interesting to read it for that cause alone, just to see what he has to say. As it turns out, what he has to say is so immensely worth while that the one who says it is forgotten.

The Bible speaks of a "straight and narrow path" which, by occult students, is taken to mean the path to complete human perfection of mind, body, and soul. This book purports to be a guide to the traveling of that path, and after reading it one is inclined to feel that such a claim is neither sacrilegious nor foolish but decidedly reasonable; as it bears internal evidence of a very high origin.

The four requisites for one who would tread this path are given as Discrimination, Desirelessness, Good Conduct and Love, and each of these faculties or conditions is rather fully discussed in direct, simple and crystal-clear language, readily understood by anyone.

But though the language is simple and the teaching clear, the working out of that

teaching in daily life is a task to engage the best and strongest of us, for the ideals so simply set forth are startling and sublime.

The three cardinal sins are declared to be gossip, cruelty, and superstition, and the way to avoid these is straightforwardly set forth. At all points, in fact, the directions for living the higher life are given explicitly and in some detail.

The book can be read in an hour or two, but many readers will want to carry it with them and read a page or two every day, for it clarifies one's ideas of human goodness.

#### PERKINS: TUBERCULOUS HIP JOINTS

**THE DIAGNOSIS, TREATMENT AND END RESULTS OF TUBERCULOUS DISEASE OF THE HIP JOINT.** By George Perkins, M. Ch. Oxon., F.R.C.S. Eng. London and New York: Humphrey Milford, Oxford University Press. 1926. Price, \$1.75.

A manual of the early diagnosis and treatment of tuberculous disease involving the various structures which enter into the formation of the hip joint, with study of the end results of various forms of treatment.

A well-made little book, printed from clear type on good paper, with many instructive skiagrams and other illustrations.

An excellent addition to the library of any orthopedist or general surgeon but of small value to the average practitioner, as he meets such cases rarely and the book is decidedly technical.

#### CUMMER: LABORATORY METHODS

**A MANUAL OF CLINICAL LABORATORY METHODS.** By Clyde Lottridge Cummer, Ph.B., M.D., Associate Professor of Clinical Pathology, School of Medicine, Western Reserve University, Cleveland, Ohio. Second Edition Revised. Illustrated. Philadelphia: Lea and Febiger. 1926. Price, \$6.00.

Doctor Cummer, in his preface to his second edition, mentions that he has "striven to prepare a textbook for medical students and a guide for physicians and laboratory technicians." His purpose has been achieved.

The material is well organized and presented in sufficient elementary detail, especially the method of procedure and handling of apparatus, to enable the student to proceed directly and without interrogating his instructor. To the physician or laboratory technician, these features, because they save time by eliminating reference to other works, would certainly be valuable, but to the man already having a more complete background in clinical laboratory methods they might be considered superfluous. However, this volume has been prepared primarily as a guide for non-advanced workers, thus the many illustrations of apparatus employed, the full page plates of microscopic subjects, the detailed, step-by-step illustrations of clinical procedures, such as blood counting, animal inoculation, etc., are very well placed and are worthy of favorable comment.

The appendix contains clinical and apparatus lists, suggestions for the efficient examination of a large number of specimens and the preparation of autogenous vaccines, in addition to the usual group of stain formulas and technic.

A short chapter on basal metabolism by M. A. Blankenthorn, M.D., describing the technic of determinations using the F. G. Benedict apparatus, as well as one on bacteriologic methods, have been included.

Otherwise the major divisions of the book remain the same. The examination of blood, urine, gastric and duodenal contents, feces, sputum, and other body fluids are taken up in turn. Some sections, for example the one dealing with the Wassermann reaction, have been re-written. New material has been added, such as cutaneous reactions, and other subjects have been brought up to date.

The table of contents and index are thorough and pleasurable to use.

A moderate-sized and practical manual for the practitioner who desires to make all or a part of his laboratory examinations.

H. C. S.

#### MEDICAL EDUCATION AND HOSPITALS

**PROCEEDINGS OF THE ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS.** Chicago, Feb. 15, 16, 17 and 18, 1926. Chicago: Press of the American Medical Association (535 N. Dearborn St.). Price \$0.50.

These proceedings are of the greatest value to all who are interested in medical education or hospital management. They contain the full text of the papers which were read before the Congress in February, 1926.

#### POULSSON: PHARMACOLOGY AND THERAPEUTICS

**A TEXTBOOK OF PHARMACOLOGY AND THERAPEUTICS.** By E. Poulsøn, Professor of Pharmacology in the University of Christiania. English Edition Edited by W. E. Dixon, M.A., M.D., F.R.S., Reader in Pharmacology and Assessor to the Regius Professor of Physic, Cambridge. American Edition. Baltimore: The Williams & Wilkins Company. 1924. Price, \$6.00.

This 1924 American edition is apparently unchanged from the one of 1923. The 1923 edition has been on our desk with other standard texts on the subject and has been in use for nearly two and one-half years. It has earned its place as a worthy and valuable work of reference.

The character of the book and its material can be very well reviewed by quotations from Doctor Dixon's introduction.

"Professor Poulsøn's 'Pharmacology' is a standard work throughout the Scandinavian countries and Germany. Its translation into English should be welcomed by all interested in Pharmacology as a science or Applied Therapeutics as an art, because

it furnishes in a concise and interesting form Continental teaching of drug actions, and, what is more important, the employment of remedies at the bedside.

"Science is essentially international, and the description of the action of drugs given here does not differ materially from what other textbooks of Pharmacology, except in certain of the explanations and hypotheses, which but serve to show something of the personality of the author and afford an insight into the Continental atmosphere. Those portions of the work which deal with therapeutics form, in my opinion, the outstanding feature. The pharmacology is often but a prelude of this. In bedside therapeutics so much is still left to the individual views of the physician: Continental physicians regard camphor as a valuable cardiac remedy, but English physicians do not ascribe to it such virtues. Nevertheless, it is these very differences which render this book stimulating and valuable.

"This work seems to me to have lost nothing of its value by the present excellent translation, which has been kept as literal as was consistent with the author's meaning. Where the views expressed do not tally with those commonly taught in English-speaking countries, no changes, comments, or footnotes are appended; for the reader requires the views of the author, not the comments of an outside critic.

"This book includes an account of the most recent remedies introduced into medicine which have been found of proven value, and gives ample space to the newer synthetic drugs."

H. C. S.

#### KILDUFFE: WASSERMANN REACTION

**THE CLINICAL INTERPRETATION OF THE WASSERMANN REACTION.** By Robert A. Kilduffe, A.B., A.M., M.D. Illustrated. Philadelphia: Lea & Febiger. 1926. Price \$2.50.

We have again and again called attention to the fact that a laboratory report is not a diagnosis; and that a diagnosis can be arrived at only by the trained physician who is able properly to evaluate history, symptoms, physical signs and laboratory findings, in relation to each other. Many fail because, having a laboratory report before them, they do not know what it means.

In this little volume, the author has endeavored to take the mystery out of the Wassermann test and to explain what is meant by "Anticomplementary reactions"; "provocative reactions"; "cholesterin-plus reactions" and the like. The fundamental and technical principles of the Wassermann test are given briefly and clearly, as well as directions for collecting specimens for the test.

This is not a book for serologists nor syphilologists. They know—or should know—all it contains. It is intended to clear up the fog which surrounds the whole question of complement fixation tests in the minds of most general practitioners, and in general it succeeds rather well. Of course, in

so technical a subject as this, one must be familiar with the nomenclature to get the full juice out of the text, but there are few physicians, aside from the classes of specialists mentioned, who will not get much more than their money's worth out of this book, in increased certitude in diagnosis and consequent professional satisfaction and success.

#### MODERN AMERICAN VERSE

**A BOOKFELLOW ANTHOLOGY, 1926.** By 115 Bookfellows. Chicago, 1217 East 53rd St.: The Bookfellows. 1926. Price \$2.00.

The Order of Bookfellows is a very interesting association of writers, editors, publishers and others who are interested in books and bookly matters. Some of these people write verse. A dozen or two—maybe a few more—occasionally write poetry. Among these is a sparse scattering of those who have sufficient following to warrant the publication of a volume of their own verses.

Last year an experiment in cooperative publication was tried. The little-known poets among the Bookfellows, who could not find a publisher nor afford to publish a book alone, joined forces and published a volume of verses in partnership. It was a big success.

This, then, is the second Anthology. The authors and publishers are 115 members of the Order, who have contributed 238 pages of verse which assays decidedly high. Probably not more than half a dozen of the poems will ever be widely known or quoted. On the other hand, there is surprisingly little trash. These folks are capable workmen, even if they cannot always command the "divine afflatus," and the result is pleasing and worthy.

It is a pleasant piece of bookmaking. The binding, type, paper, format and decorations are simple, adequate and harmonious.

To those who care for verse (and most of us would do well to read more of it) the volume is recommended. It pleases the eye, flicks the emotions and arouses thought. A good book to dip into in spare moments.

Incidentally, if you are bookishly inclined, it will pay you to write for information regarding membership in the Order of Bookfellows, at the address given above.

#### STEWART: DIATHERMY IN PNEUMONIA

**DIATHERMY WITH SPECIAL REFERENCE TO PNEUMONIA.** By Harry Eaton Stewart, M.D. Illustrated. Second Edition, Revised. New York: Paul B. Hoeber, Inc. 1926. Price \$3.00.

Dr. Stewart's name is closely associated with the application of diathermy to the treatment of pneumonia, and the appearance of a second edition of this book three years after the first shows that his work has aroused much interest.

The author feels that one cannot apply diathermy successfully in the treatment of

pneumonia without having an adequate working knowledge of the general potentialities of this modality, so a good part of the book is taken up with a discussion of medical diathermy in all its various applications. In the section dealing with pneumonia the results in 248 cases are reported in detail.

Every man who has a diathermy machine needs this book as a simple manual of technique; and those who have none ought to find out what the others are doing.

#### ABT: PEDIATRICS

**ABT'S PEDIATRICS.** By 150 Specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octave volumes totaling 8,000 pages with 1,500 illustrations, and separate Index Volume free. Now ready—Volume VIII and General Index to Volumes I to VIII. Philadelphia and London: W. B. Saunders Company. 1926. Price, \$10.00 per volume.

Abt's encyclopedic work on the diseases of children is now complete. Every worker in this field and, in fact, all physicians in the country, are so well acquainted with the scope of this System of Pediatrics and with the qualifications of its editor that a lengthy discussion of these matters would be out of place.

This eighth volume deals with Diseases of the Skin, Ear and Eye; Hospitals for Infants and Children; Medicolegal Questions; Tumors of Infants and Children; and Parasites.

With this volume comes the complete, general index of the whole set, bound as a separate, small book. This is to be kept on the physician's desk for ready reference and will prove extremely useful.

#### SUTTON: SKIN

**DISEASES OF THE SKIN.** By Richard L. Sutton, M.D., LL.D., F.R.S. (Edin.). Illustrated. Sixth Edition Revised and Enlarged. St. Louis: The C. V. Mosby Company. 1926. Price \$12.00.

The sixth edition of this work has followed the fifth at an interval of only two years, but the material has been rearranged, eliminating obsolete matter and adding the new things which have developed during that interval.

The text material is arranged on the basis of pathology, which feature is given prominence throughout. Thus the divisions are: Hyperemias; Inflammations; Hemorrhages; Hypertrophies; Atrophies; Anom-

alies of Pigmentation; Neuroses; New Growths; Diseases of the Appendages; Parasitic Affections and Diseases of the Mucous Membranes Adjoining the Skin. This system of classification should facilitate the recognition of any particular case.

The style of writing is clear and direct, with little or no useless verbiage, so that the book is especially practical for the busy man. For those who wish to go into any particular subject more exhaustively, extensive bibliographies follow the author's consideration of every important disease. Suggestions for treatment are definite, concise and up-to-date.

The volume is a large one (1303 pages, including 35 pages of index), and is not so substantially bound as it might be, considering its size and the splendid, heavy-coated paper which is used throughout. The type is bright and well spaced and subheads are freely used to facilitate reference.

The illustrations are a noteworthy feature. There is a pleasing absence of the old, standard pictures which are to be found in some textbooks, reprinted from one edition to another. Almost all the illustrations are photographs of the author's own cases or those of his friends and they make the conditions very clear. There are eleven colored plates which are nothing remarkable. Photomicrographs are helpfully used, and are clear and good, like the other photographs.

This book is an especially useful one for general practitioners, as every ordinary (and many unusual) skin disease is covered in one volume in a clear, practical and readable manner, with pictures which render the recognition of various conditions easy. Treatment, too, is considered in a manner to make the suggestions useable.

The dermatologist will find it useful for reference when time presses, and the bibliographies will guide his more extended studies.

#### LLOYD: PERIMETRY

**VISUAL FIELD STUDIES.** By Ralph I. Lloyd, M.D., F.A.C.S. Illustrated. New York: The Technical Press. 1926. Price \$6.00.

A book dealing with the examination and recording of the visual fields, by means of perimeters of various types, and a study of the changes which take place in these fields in various ocular and general diseases.

The volume is based on a series of post-graduate lectures on ophthalmology and is intended almost solely for ophthalmologists, to whom it should prove very helpful, as it goes into full details of perimetric studies, with many charts and diagrams. General practitioners will find little which will be of interest or value to them.

# Medical News



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## YELLOW FEVER SUBJECT PENSIONED FOR HIS HEROISM

Belated recognition has been accorded by Congress to Clyde L. West, former private in the Army, who risked his life to advance the cause of science during the Spanish-American War.

In 1900, in Cuba, he allowed himself to be bitten by infected mosquitoes from yellow fever patients so that Major Walter Reed might experiment with a preventive for the dreaded fever.

West, now a watchman in Washington, has been awarded a pension of \$100 a month.

## SERVICE TO PHYSICIANS

CLINICAL MEDICINE has inaugurated a new service for its readers. At the down-town office, 700 Cass Street (Chicago), there is a commodious waiting room, with facilities for writing and study. Current medical magazines and bulletins are always available and particularly the daily list of all clinics which are being held in the various hospitals of Chicago from day to day. This should prove invaluable to visiting physi-

cians who desire to see as much as possible in a short time. Medical reference books are also available.

All readers of CLINICAL MEDICINE are invited to make its city office their headquarters when in Chicago.

## MEDICAL PERSONNEL OF THE ARMY

The Medical Reserve Corps of the Army now has an enrollment of 10,327; the Medical Administration Corps of 1,496; and the Sanitary Corps of 497. This is about half the number needed under the general mobilization plan. All physicians who desire to discharge their full duty to the Nation should apply for a commission.

Incidentally, the Regular Army Medical Department now has some First Lieutenants, twenty-five young men having finished their internships at Army hospitals this summer. Thirty-five are enrolled for Army internships next year.



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## TWO PROMINENT HEALTH OFFICIALS

Surgeon General H. S. Cumming, of the U. S. Public Health Service, who has been inspecting health stations instituted abroad

by the United States for the examination of emigrants before they embark for our country, and Dr. Amyot, Deputy Minister of Health for Canada.

#### DEATH OF DR. HENRY M. WHELPLEY

Dr. Henry M. Whelpley, professor of *materia medica* and pharmacy in the Medical Department of Washington University; director of the biological laboratory and secretary of the Missouri Medical College and St. Louis Postgraduate School of Medicine; past treasurer and president of the American Pharmaceutical Association, died June 26, 1926, after a short and sudden illness, at Kansas City, Mo.

Dr. Whelpley held many important positions besides those already noted and his death will prove a loss to Pharmacy and to Medicine.

#### UNITED STATES CIVIL SERVICE EXAMINATION

##### Medical Officers

Applications for medical officer positions will be rated as received at Washington, D. C., until December 30. The examinations are to fill vacancies in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, the Panama Canal Service, the Veterans' Bureau, and other branches.

The examinations are of five grades: Junior medical officer, assistant medical officer, associate medical officer, medical officer, and senior medical officer.

For the Departmental Service at Washington, the entrance salaries range from \$1,860 a year for the junior grade to \$5,200 a year for the senior grade. Juniors may be promoted to \$2,400 and seniors may be promoted to \$6,000 after the six months' period of probation. Higher-salaried positions may be filled through promotion in accordance with the civil service rules. Promotion from grade to grade may also be made in accordance with the civil service rules as vacancies occur. For field branches the salaries are approximately the same except that deductions are made where quarters and subsistence are furnished and where part-time duty, only, is required.

Eligibles are needed who are qualified in general medicine and surgery. There is especial need for eligibles qualified in the

various specialties. Practically any specialty may be named by the applicant.

##### Aides

Applications for appointment as occupational therapy aide and pupil-aide, in various lines, will be received up to December 30, 1926. Salaries range from \$1,140 to \$2,040 a year.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the Secretary of the Board of U. S. Civil Service Examiners at the post office or customhouse in any city.



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LINCOLN'S PHYSICIAN, DR. JOSHUA R. HAYES

Dr. Joshua Robert Hayes, 95 years old, who was President Lincoln's personal physician, and who is the oldest living graduate of the University of Pennsylvania, smokes, eats and lives as he did twenty-five years ago—and longs for a glass of real beer.

Dr. Hayes served throughout the Civil War and finally retired twenty years ago, at that time being Chief Medical Examiner of the Pension Office.

### CHICAGO THE HEALTHIEST LARGE CITY

In 1924, Chicago had the lowest death rate of any city of over a million inhabitants in the world. The figures for 1925 are now nearly all in (London, England, and Osaka, Japan, alone remain to be heard from), and she seems to have carried off the palm again.

The standing of the various great cities of the world, in terms of deaths per 1,000 of population, per annum, is as follows:

Chicago .....	11.5
Berlin .....	11.7
New York City .....	12.2
Vienna .....	12.9
Philadelphia .....	13.2
Buenos Aires .....	13.7
Paris .....	14.7
Bombay .....	25.4
Calcutta .....	32.7

### WORLD TREND TO METRIC STANDARDS IS RAPID

That the United States will inevitably adopt the decimal metric weights and measures is the declaration of Congressman Fred A. Britten of Illinois. Urging this step, in the interests of efficiency and economy, he says: "We have the decimal system for our money; we must have the decimal metric system for our weights and measures. Any child can learn it overnight. But there is not a man or woman living in the United States who can, offhand and without a book, tell you our present various weights and measures."

Congressman Britten emphasizes the fact that our customary standards are different from those of the British—our gallon, quart, pint, bushel, hundredweight, ton and other units all being unlike theirs. "If we adopt the metric standards, the British Commonwealths would follow," he declares. All other civilized nations in the world are already on the metric basis.

In recent testimony before Congress it was pointed out that the world-wide trend to metric standardization is very rapid. Within the last five years Japan, Russia, Poland, Latvia, Morocco, Turkey, Greece, Estonia, Lithuania, the Netherlands, Indies, Siam and Persia have confirmed by legislative enactment their adoption of metric units.

"With almost a billion humans using metric units in everyday transactions, it is manifest that these standards are simple and practical," declares Aubrey Drury, Director of the All-America Standards Council. "To secure them for ourselves, our old yard will simply be advanced about 10 percent to the meter, or world yard; our old pound avoirdupois will be advanced about 10 percent to the 500-Gram weight or world pound; our old liquid quart will be advanced about 5 percent to the liter, or world quart. All units will be decimals divided, like our currency."

Metric advocates declare that the new measures will greatly benefit our world trade and domestic trade, agriculture, education and household economics.



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### PHYSICIAN A PROMINENT ATHLETE

Dr. Joseph J. Eller, a dermatologist of New York City and a Fellow of the American Medical Association, is captain of the Whippany River Polo Club, of Morristown, N. J. He has recently been spending some time in visiting the dermatological clinics of England, Austria, Germany and Spain. While in the last-named country he played polo with the King's team.

Liberty is not bestowed; it is an achievement, but it comes to no people who have not passed through the successive stages which always precede it; it is very far from a state of nature.—Coolidge.

**TINKERING WITH THE HARRISON LAW**

It appears that, not content with hobbling the professions of medicine and pharmacy, by means of the Harrison and the prohibition laws, some of our astute (?) legislators now propose to hog-tie and gag the followers of these professions.

Senate bill No. 4085 seems designed to take from us all the small amount of liberty in these matters which we now enjoy and place us at the mercy of one man who is responsible to nobody.

It might be well to write to one of your senators for a copy of this bill; study it carefully; and then tell all who represent you in Congress what you think of it. They'll never know unless you tell them; and if you take no action in the matter, don't squeal if somebody "slips something over on you."

**THE NATIONAL LEPROSARIUM**

When lepers are discovered in the United States, they are sent to the national leprosarium at Carville, Louisiana, which is under the direction of the U. S. Public Health Service. Here they live on a beautiful tract of land, comprising 358 acres, as a complete self-contained colony with all the things (except health!) which people need to make them happy. There is a Roman Catholic and a protestant chapel, their food is prepared in the most approved manner and every resource of modern medical science is applied to the cure or amelioration of their malady.



Reprinted from *American Medicine*

**DEATH OF DR. TALMEY**

Dr. B. S. Talmey, of New York, who was well known as a writer on sexology and kindred subjects, died at his home on June 30, 1926, of an obscure malady which he himself called "angiospasm of the pectoral arteries."

His death is a loss to the profession, as there are few who have studied the question of sex so deeply as he and written about it in so clear and scientific a manner.



# Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

GG-22	Biological Products for Human Use. With Indications for Use, Dosage, Price List, etc. Gilliland Laboratories.	GG-91	The Golden Way. 8-page booklet by Century National Chemical Co.
GG-29	Oral Health, and the Relation of Diseases of the Teeth and Gums (Pyorrhea) to Diseases of the Body. 24-page booklet. The Dentinol & Pyorrhicide Co.	GG-93	A New Hypnotic for the Treatment of Serious Insomnia. 4-page folder by Ciba Co.
GG-30	Helping the Cell to Help Itself. 32-page booklet by The Alkalol Co.	GG-172	Phyllosan in Anemia, Chlorosis and Wasting Diseases. 4-page booklet. Merck & Co.
GG-31	The Romance of Digitalis — The Story of Its Discovery. 12-page booklet by Hoffmann-La Roche Chem. Co.	GG-198	Pluto Water. Its Medicinal Values. 16-page booklet. French Lick Springs Hotel Co.
GG-55	Your Prestige and Profit. 8-page booklet. The Carroll Dunham Smith Pharmacal Co.	GG-222	Rabies Vaccine. 24-page booklet. Parke, Davis & Co.
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GG-73	How to Use Pan-Secretin Co. with Most Success in Diabetes. 10-page booklet by Harrower Laboratory.	GG-255	Lunosol, by Herman Hille, Ph.D. 16-page booklet. Hille Laboratories.
GG-75	Intestinal Rectal and Anal Pathology. Booklet by Nujol Laboratories.	GG-309	The Journal of Organotherapy. 95-page booklet published monthly. G. W. Carnrick Company.
GG-81	Auto-Intoxication. 20-page booklet by Burnham Soluble Iodine Co.	GG-311	The Cure of Cystitis, Pyelitis and other Inflammatory Conditions of the Urinary Tract. Chicago Pharmacal Co.
GG-84	Storm Binder and Abdominal Supporter. 4-page folder by Dr. Katherine L. Storm.	GG-380	Nativell's Crystallized Digitaline. 8-page booklet. E. Fougera & Co.
GG 403		GG 403	Medinal. 4-page folder. Schering & Glatz, Inc.

## SEND FOR THIS LITERATURE

September, 1926

GG-675 The Largest Organ in the Body  
THE LIVER is Usually the Most Neglected and Least Understood.  
Vass Chemical Co.

GG-677 The Ideal Tampon. C. B. Moyer & Co.

GG-680 Agar of No Consequence in Emulsions of Liquid Petrolatum. Standard Oil Co.

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GG-706 The Prevention of Fecal Retardation. William R. Warner & Co., Inc.

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GG-710 The Quartz Lamp, Sept. 15, 1926. Hanovia Chem. & Mfg. Co.

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GG-763 Sodium Ricinoleate in Dandruff. Wm. S. Merrell Company.

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GG-771 Papillary-Adeno Carcinoma of the Ovary; Report of Case Effectively Treated with Colloidal Gold by Louis H. Nowack, M.D. Kahlenberg Lab.

GG-772 Fischer's Magazine, August, 1926. H. G. Fischer & Co., Inc.

GG-773 The Child in Medicine. 24-page booklet. Battle & Co.

GG-774 Detoxol Liquid. Wm. S. Merrell Company.

GG-775 Intravenous Treatment of Hay Fever. New York Intravenous Laboratory.

GG-776 Loeser's Intravenous Solution of Sodium Thiosulphate. New York Intravenous Laboratory.

GG-777 The International Medical and Surgical Survey. H. G. Fischer & Co., Inc.

GG-778 Physiotherapy in the Medical Department of the United States Navy, by Erik G. Hakansson, M.D. H. G. Fischer & Co., Inc.

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GG-780 Optotypes, by John Green, M.D., LL.D., and A. E. Ewing, A.M., M.D. C. V. Mosby Company.

GG-781 Hang This Up—It Tells How to Make Percentage Solutions. Sharp & Dohme.

